
REND LAKE

**BIG MUDDY RIVER
FRANKLIN COUNTY, ILLINOIS**

SPECIFICATIONS FOR

REND CITY WETLANDS

SOLICITATION NO. DACW43-03-B-0727

THIS SOLICITATION IS 100% SMALL BUSINESS SET-ASIDE



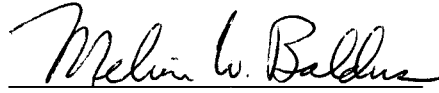
**US Army Corps
of Engineers
St. Louis District**


Gateway to Excellence

May 2003

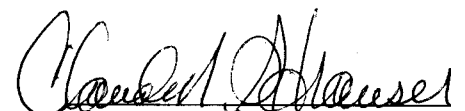
DESIGN AUTHENTICATION

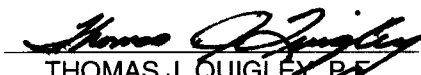
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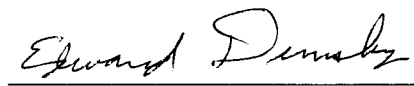

MELVIN W. BALDUS, P.E.
Chief, Engineering Division



BOBBY R. HUGHEY, P.E.
Chief, Design Branch


for GEORGE J. POSTOL, P.E.
Chief, Geotechnical Branch


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Chief, Mechanical/ Electrical
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SOLICITATION, OFFER, AND AWARD <i>(Construction, Alteration, or Repair)</i>		1. SOLICITATION NO. DACW43-03-R-0727	2. TYPE OF SOLICITATION <input type="checkbox"/> SEALED BID (IFB) <input checked="" type="checkbox"/> NEGOTIATED (RFP)	3. DATE ISSUED 09-Jun-2003	PAGE OF PAGES 1 OF 128
IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.					
4. CONTRACT NO.		5. REQUISITION/PURCHASE REQUEST NO. W81C8X-3141-0683		6. PROJECT NO.	
7. ISSUED BY CONTRACTING DIVISION USARMY ENGR DIST ST LOUIS 1222 SPRUCE ST, RM 4.207 ST LOUIS MO 63103-2833 TEL: 314-331-8500		CODE DACW43	8. ADDRESS OFFER TO <i>(If Other Than Item 7)</i> CODE <div style="text-align: center; padding: 20px;"> See Item 7 </div>		
9. FOR INFORMATION CALL:		A. NAME MARILYN M AIRD		B. TELEPHONE NO. <i>(Include area code) (NO COLLECT CALLS)</i> 314-331-8528	
SOLICITATION					
NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".					
10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS <i>(Title, identifying no., date):</i> REND CITY WETLANDS, REND LAKE, IL. Work consists of, but is not limited to, clearing, grubbing and stripping, excavation and embankment, crushed stone surfacing, stone protection, geotextile and geogrid, sluice gates, culvert pipes, establishment of turf, concrete, miscellaneous metals, painting, and siphon pipe and appurtenances. The estimated magnitude of construction is between \$1,000,000.00 and \$5,000,000.00. This requirement is being solicited under the 8(a) program.					
11. The Contractor shall begin performance within <u>10</u> calendar days and complete it within <u>240</u> calendar days after receiving <input type="checkbox"/> award, <input checked="" type="checkbox"/> notice to proceed. This performance period is <input checked="" type="checkbox"/> mandatory, <input type="checkbox"/> negotiable. <i>(See _____.)</i>					
12 A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? <i>(If "YES," indicate within how many calendar days after award in Item 12B.)</i> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO					12B. CALENDAR DAYS
13. ADDITIONAL SOLICITATION REQUIREMENTS: A. Sealed offers in original and <u>0</u> copies to perform the work required are due at the place specified in Item 8 by 04:30 PM <u>09 Jul 2003</u> <i>(hour) (date)</i> . If this is a sealed bid solicitation, offers must be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due. B. An offer guarantee <input checked="" type="checkbox"/> is, <input type="checkbox"/> is not required. C. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference. D. Offers providing less than <u>60</u> calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.					

SOLICITATION, OFFER, AND AWARD (Continued) <i>(Construction, Alteration, or Repair)</i>										
OFFER (Must be fully completed by offeror)										
14. NAME AND ADDRESS OF OFFEROR <i>(Include ZIP Code)</i>						15. TELEPHONE NO. <i>(Include area code)</i>				
						16. REMITTANCE ADDRESS <i>(Include only if different than Item 14)</i> See Item 14				
CODE		FACILITY CODE								
17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within _____ calendar days after the date offers are due. <i>(Insert any number equal to or greater than the minimum requirements stated in Item 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.)</i>										
AMOUNTS		SEE SCHEDULE OF PRICES								
18. The offeror agrees to furnish any required performance and payment bonds.										
19. ACKNOWLEDGMENT OF AMENDMENTS <i>(The offeror acknowledges receipt of amendments to the solicitation -- give number and date of each)</i>										
AMENDMENT NO.										
DATE										
20A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER <i>(Type or print)</i>						20B. SIGNATURE			20C. OFFER DATE	
AWARD (To be completed by Government)										
21. ITEMS ACCEPTED:										
22. AMOUNT		23. ACCOUNTING AND APPROPRIATION DATA								
24. SUBMIT INVOICES TO ADDRESS SHOWN IN <i>(4 copies unless otherwise specified)</i>				ITEM		25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO <input type="checkbox"/> 10 U.S.C. 2304(c) <input type="checkbox"/> 41 U.S.C. 253(c)				
26. ADMINISTERED BY			CODE		27. PAYMENT WILL BE MADE BY: CODE					
CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE										
<input type="checkbox"/> 28. NEGOTIATED AGREEMENT <i>(Contractor is required to sign this document and return _____ copies to issuing office.)</i> Contractor agrees to furnish and deliver all items or perform all work, requisitions identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications or incorporated by reference in or attached to this contract.						<input type="checkbox"/> 29. AWARD <i>(Contractor is not required to sign this document.)</i> Your offer on this solicitation, is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.				
30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN <i>(Type or print)</i>						31A. NAME OF CONTRACTING OFFICER <i>(Type or print)</i>				
30B. SIGNATURE			30C. DATE			TEL:		EMAIL:		
						31B. UNITED STATES OF AMERICA BY		31C. AWARD DATE		

TOC.1

COVER

BIDDING REQUIREMENTS, CONTRACT FORMS AND CONTRACT CONDITIONS

SF 1442	SOLICITATION, OFFER, AND AWARD	
00010	BIDDING SCHEDULE	00010-1
00100	INSTRUCTIONS TO BIDDERS	00100-1
00600	SOLICITATION PROVISIONS	00600-1
00700	CONTRACT CLAUSES	00700-1
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DIVISION 1 - GENERAL REQUIREMENTS

01025	MEASUREMENT AND PAYMENT	01025-1
01090	SOURCES FOR REFERENCE PUBLICATIONS	01090-1
01130	ENVIRONMENTAL PROTECTION	01130-1
01300	SUBMITTAL PROCEDURES	01300-1
01320	PROJECT SCHEDULE	01320-1
01440	CONTRACTOR QUALITY CONTROL	01440-1
01500	TEMPORARY CONSTRUCTION FACILITIES	01500-1

DIVISION 2 - SITE WORK

02110	CLEARING, GRUBBING AND STRIPPING	02110-1
02220	EXCAVATION	02220-1
02221	EMBANKMENT	02221-1
02230	CRUSHED STONE SURFACING	02230-1
02240	GEOTEXTILE AND GEOGRID	02240-1
02270	STONE PROTECTION	02270-1
02610	CULVERT PIPE	02610-1
02740	BITUMINOUS CONCRETE PAVEMENT	02740-1
02840	STAFF GAGES	02840-1
02900	ESTABLISHMENT OF TURF	02900-1

DIVISION 3 - CONCRETE

03300	CONCRETE	03300-1
03410	PLANT-PRECAST AND PRECAST PRESTRESSED STRUCTURAL CONCRETE	03410-1

DIVISION 4 - MASONRY

(NOT USED)

DIVISION 5 - METALS

05100	METALWORK FABRICATION AND MISCELLANEOUS PROVISIONS	05100-1
05500	MISCELLANEOUS METAL MATERIALS, STANDARD ARTICLES AND SHOP FABRICATED ITEMS	05500-1

DIVISION 6 THRU 8

(NOT USED)

DIVISION 9 - FINISHES

09965 PAINTING

09965-1

DIVISION 10 THRU 14

(NOT USED)

DIVISION 15 - MECHANICAL

15100 SLUICE GATES AND HOISTS

15100-1

15200 SIPHON PIPE AND APPURTENANCES

15200-1

DIVISION 16 - ELECTRICAL

16400 ELECTRICAL WORK AND EQUIPMENT

16400-1

xxx

Section 00010 - Solicitation Contract Form

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001	REND CITY WETLANDS - Mob and Demob	1	Lump Sum	_____	_____
0002	Clearing, Grubbing, and Stripping	1	Lump Sum	_____	_____
0003	Earthwork	1	Lump Sum	_____	_____
0004	Graded Stone C	540	Ton	_____	_____
0005	Bedding Material	150	Ton	_____	_____
0006	Crushed Stone Surfacing	4,300	Ton	_____	_____
0007	Overflow Weirs	1	Lump Sum	_____	_____
0008	Culvert Pipe, Stop- Log Structures, Sluice Gate Structures, and End structures	1	Lump Sum	_____	_____
0009	Siphon	1	Lump Sum	_____	_____
0010	Establishment of Turf	1	Lump Sum	_____	_____
0011	Staff Guages	1	Lump Sum	_____	_____
0012	Piezometer Abandonment				
0012AA	First 10	10	Each	_____	_____
0012AB	All over 10	10	Each	_____	_____
				TOTAL AMOUNT	\$ _____

FOB: Destination

BID NOTES.

1. All quantities shown on the BIDDING SCHEDULE are estimated quantities except when the unit is shown as lump sum "LS".

2. When bids are solicited on a unit price basis, bidders shall insert in the spaces provided for in the SCHEDULE both the "unit price" and the "estimated amount" resulting from applying the said unit price to the estimated quantity shown. In event the bidder quotes only a total price ("estimated amount") in its bid, and fails to quote the unit price, the Government will determine such unit price by dividing the total price quoted by the quantity of the item set out in the SCHEDULE. The bidder agrees that the unit price so determined shall be used for the purpose of bid evaluation, award and all payments to the Contractor including final payment.

3. All extensions of the unit prices shown will be subject to verification by the Government. In case of variation between the unit price and the extension, the unit price will be considered to be the bid and the extension will be corrected accordingly.

4. If a modification to a bid based on unit prices is submitted, which provides for a lump sum adjustment to the total estimated cost, the application of the lump sum adjustment to each unit price in the bid schedule must be stated. If it is not stated, the bidder agrees that the lump sum adjustment shall be applied on a pro rata basis to every unit price in the bid schedule.

5. Bidders are encouraged to pay particular attention to the requirements on lab "validation" in Section 01440 of the contract specifications.

6. EVALUATION OF SUBDIVIDED ITEMS (MAR 1995) EFARS 52.212-5000 Item No. 0012 are subdivided into two or more estimated quantities and are to be separately priced. The Government will evaluate each of these items on the basis of total price of its sub-items.

7. VARIATIONS IN ESTIMATED QUANTITIES - SUBDIVIDED ITEMS. (MAR 1995) EFARS 52.212-5001. This variations in estimated quantities clause is applicable only to Item No. 0012.

- (a) Variation from the estimated quantity in the actual work performed under any second or subsequent subitem or elimination of all work under such a second or subsequent subitem will not be the basis for an adjustment in contract unit price.
- (b) Where the actual quantity of work performed for Item No. 0012 is less than 85 percent of the quantity of the first subitem listed under that item, the Contractor will be paid at the contract unit price for that subitem for the actual quantity of work performed, and, in addition, an equitable adjustment shall be made in accordance with the Contract Clause FAR 52.211-18, Variation in Estimated Quantities.
- (c) If the actual quantity of work performed under Item No. 9012 00010-2 (1-03) exceeds 115 percent or is less than 85 percent of the total estimated quantity of the subitems under that item, and/or if the quantity of work performed under the second subitem or any subsequent subitem under Item No. 0012 exceeds 115 percent or is less than 85 percent of the estimated quantity of any such subitem, and if such variation causes an increase or a decrease in the time required for performance of this contract, the contract completion time will be adjusted in accordance with the Contract Clause FAR 52.211-18, Variation in Estimated Quantities.

Section 00100 - Bidding Schedule/Instructions to Bidders

52.204-6	Data Universal Numbering System (DUNS) Number	JUN 1999
52.215-20	Requirements for Cost or Pricing Data or Information Other Than Cost or Pricing Data	OCT 1997
52.216-1	Type Of Contract	APR 1984
52.222-23	Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity for Construction	FEB 1999
52.225-10	Notice of Buy American Act Requirement--Construction Materials	MAY 2002
52.232-28	Invitation to Propose Performance-Based Payments	MAR 2000
52.233-2	Service Of Protest	AUG 1996
52.236-27 Alt I	Site Visit (Construction) (Feb 1995) - Alternate I	FEB 1995
52.236-28	Preparation of Proposals --Construction	OCT 1997

Section 00100 - Bidding Schedule/Instructions to Bidders

CLAUSES INCORPORATED BY FULL TEXT

52.204-6 DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBER (JUN 99)

(a) The offeror shall enter, in the block with its name and address on the cover page of its offer, the annotation "DUNS" followed by the DUNS number that identifies the offeror's name and address exactly as stated in the offer.

(b) If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one. A DUNS number will be provided immediately by telephone at no charge to the offeror. For information on obtaining a DUNS number, the offeror, if located within the United States, should call Dun and Bradstreet at 1-800-333-0505. The offeror should be prepared to provide the following information:

- (1) Company name.
- (2) Company address.
- (3) Company telephone number.
- (4) Line of business.
- (5) Chief executive officer/key manager.
- (6) Date the company was started.
- (7) Number of people employed by the company.
- (8) Company affiliation.

(c) Offerors located outside the United States may obtain the location and phone number of the local Dun and Bradstreet Information Services office from the Internet Home Page at <http://www.customerservice@dnb.com>. If an offeror is unable to locate a local service center, it may send an e-mail to Dun and Bradstreet at globalinfo@mail.dnb.com.

(End of provision)

52.215-20 REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA (OCT 1997)

(a) Exceptions from cost or pricing data. (1) In lieu of submitting cost or pricing data, offerors may submit a written request for exception by submitting the information described in the following subparagraphs. The Contracting Officer may require additional supporting information, but only to the extent necessary to determine whether an exception should be granted, and whether the price is fair and reasonable.

(i) Identification of the law or regulation establishing the price offered. If the price is controlled under law by periodic rulings, reviews, or similar actions of a governmental body, attach a copy of the controlling document, unless it was previously submitted to the contracting office.

(ii) Commercial item exception. For a commercial item exception, the offeror shall submit, at a minimum, information on prices at which the same item or similar items have previously been sold in the commercial market that is adequate for

evaluating the reasonableness of the price for this acquisition. Such information may include--

(A) For catalog items, a copy of or identification of the catalog and its date, or the appropriate pages for the offered items, or a statement that the catalog is on file in the buying office to which the proposal is being submitted. Provide a copy or describe current discount policies and price lists (published or unpublished), e.g., wholesale, original equipment manufacturer, or reseller. Also explain the basis of each offered price and its relationship to the established catalog price, including how the proposed price relates to the price of recent sales in quantities similar to the proposed quantities;

(B) For market-priced items, the source and date or period of the market quotation or other basis for market price, the base amount, and applicable discounts. In addition, describe the nature of the market;

(C) For items included on an active Federal Supply Service Multiple Award Schedule contract, proof that an exception has been granted for the schedule item.

(2) The offeror grants the Contracting Officer or an authorized representative the right to examine, at any time before award, books, records, documents, or other directly pertinent records to verify any request for an exception under this provision, and the reasonableness of price. For items priced using catalog or market prices, or law or regulation, access does not extend to cost or profit information or other data relevant solely to the offeror's determination of the prices to be offered in the catalog or marketplace.

(b) Requirements for cost or pricing data. If the offeror is not granted an exception from the requirement to submit cost or pricing data, the following applies:

(1) The offeror shall prepare and submit cost or pricing data and supporting attachments in accordance with Table 15-2 of FAR 15.408.

As soon as practicable after agreement on price, but before contract award (except for unpriced actions such as letter contracts), the offeror shall submit a Certificate of Current Cost or Pricing Data, as prescribed by FAR 15.406-2.

(End of provision)

52.216-1 TYPE OF CONTRACT (APR 1984)

The Government contemplates award of a **firm fixed price** contract resulting from this solicitation.

(End of clause)

52.222-23 NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (FEB 1999)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation for each trade	Goals for female participation for each trade
11.4	6.9

|

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the --

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is

Franklin County , IL.

(End of provision)

52.225-10 NOTICE OF BUY AMERICAN ACT REQUIREMENT--CONSTRUCTION MATERIALS (MAY 2002)

(a) Definitions. Construction material, domestic construction material, and foreign construction material, as used in this provision, are defined in the clause of this solicitation entitled "Buy American Act --Construction Materials" (Federal Acquisition Regulation (FAR) clause 52.225-9).

(b) Requests for determinations of inapplicability. An offeror requesting a determination regarding the inapplicability of the Buy American Act should submit the request to the Contracting Officer in time to allow a determination before submission of offers. The offeror shall include the information and applicable supporting data required by paragraphs (c) and (d) of the clause at FAR 52.225-9 in the request. If an offeror has not requested a determination regarding the inapplicability of the Buy American Act before submitting its offer, or has not received a response to a previous request, the offeror shall include the information and supporting data in the offer.

(c) Evaluation of offers. (1) The Government will evaluate an offer requesting exception to the requirements of the Buy American Act, based on claimed unreasonable cost of domestic construction material, by adding to the offered price the appropriate percentage of the cost of such foreign construction material, as specified in paragraph (b)(3)(i) of the clause at FAR 52.225-9.

(2) If evaluation results in a tie between an offeror that requested the substitution of foreign construction material based on unreasonable cost and an offeror that did not request an exception, the Contracting Officer will award to the offeror that did not request an exception based on unreasonable cost.

(d) Alternate offers.

(1) When an offer includes foreign construction material not listed by the Government in this solicitation in paragraph (b)(2) of the clause at FAR 52.225-9, the offeror also may submit an alternate offer based on use of equivalent domestic construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate Standard Form 1442 for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of the clause at FAR 52.225-9 for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of the clause at FAR 52.225-9 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic construction material, and the offeror shall be required to furnish such domestic construction material. An offer based on use of the foreign construction material for which an exception was requested--

(i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or

(ii) May be accepted if revised during negotiations.

(End of provision)

52.232-28 INVITATION TO PROPOSE PERFORMANCE-BASED PAYMENTS (MAR 2000)

(a) The Government invites the offeror to propose terms under which the Government will make performance-based contract financing payments during contract performance. The Government will consider performance-based payment financing terms proposed by the offeror in the evaluation of the offeror's proposal. The Contracting Officer will incorporate the financing terms of the successful offeror and the FAR clause, Performance-Based Payments, at FAR 52.232-32, in any resulting contract.

(b) In the event of any conflict between the terms proposed by the offeror and the terms in the clause at FAR 52.232-32, Performance-Based Payments, the terms of the clause at FAR 52.232-32 shall govern.

(c) The Contracting Officer will not accept the offeror's proposed performance-based payment financing if the financing does not conform to the following limitations:

(1) The Government will make delivery payments only for supplies delivered and accepted, or services rendered and accepted in accordance with the payment terms of this contract.

(2) The terms and conditions of the performance-based payments must--

- (i) Comply with FAR 32.1004;
 - (ii) Be reasonable and consistent with all other technical and cost information included in the offeror's proposal; and
 - (iii) Their total shall not exceed 90 percent of the contract price if on a whole contract basis, or 90 percent of the delivery item price if on a delivery item basis.
- (3) The terms and conditions of the performance-based financing must be in the best interests of the Government.
- (d) The offeror's proposal of performance-based payment financing shall include the following:
- (1) The proposed contractual language describing the performance-based payments (see FAR 32.1004 for appropriate criteria for establishing performance bases and performance-based finance payment amounts).
 - (2) A listing of--
 - (i) The projected performance-based payment dates and the projected payment amounts; and
 - (ii) The projected delivery date and the projected payment amount.
 - (3) Information addressing the Contractor's investment in the contract.
- (e) Evaluation of the offeror's proposed prices and financing terms will include whether the offeror's proposed performance-based payment events and payment amounts are reasonable and consistent with all other terms and conditions of the offeror's proposal.

(End of provision)

52.233-2 SERVICE OF PROTEST (AUG 1996)

- (a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from

**U.S. Army Corps of Engineers
St. Louis District
Attn: Contracting Division
1222 Spruce Street
St. Louis, Missouri 63103-2833**

- (b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

(End of provision)

52.236-27 SITE VISIT (CONSTRUCTION) (FEB 1995) – ALTERNATE I (FEB 1995)

- (a) The clauses at 52.236-2, Differing Site Conditions, and 52.236-3, Site Investigations and Conditions Affecting the Work, will be included in any contract awarded as a result of this solicitation. Accordingly, offerors or quoters are

urged and expected to inspect the site where the work will be performed.

(b) An organized site visit has been scheduled for-- **June 26, 2003 at 10:30 AM**

(c) Participants will meet at - - **Rend Lake Management Office**

(End of provision)

52.236-28 PREPARATION OF PROPOSALS--CONSTRUCTION (OCT 1997)

(a) Proposals must be (1) submitted on the forms furnished by the Government or on copies of those forms, and (2) manually signed. The person signing a proposal must initial each erasure or change appearing on any proposal form.

(b) The proposal form may require offerors to submit proposed prices for one or more items on various bases, including--

(1) Lump sum price;

(2) Alternate prices;

(3) Units of construction; or

(4) Any combination of paragraphs (b)(1) through (b)(3) of this provision.

(c) If the solicitation requires submission of a proposal on all items, failure to do so may result in the proposal being rejected without further consideration. If a proposal on all items is not required, offerors should insert the words "no proposal" in the space provided for any item on which no price is submitted.

(d) Alternate proposals will not be considered unless this solicitation authorizes their submission.

(End of provision)

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Section 00600 - Representations & Certifications

52.203-11	Certification And Disclosure Regarding Payments To Influence Certain Federal Transactions	APR 1991
52.204-3	Taxpayer Identification	OCT 1998
52.219-1 Alt I	Small Business Program Representations (Apr 2002) Alternate I	APR 2002
52.219-22	Small Disadvantaged Business Status	OCT 1999
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52.223-13	Certification of Toxic Chemical Release Reporting	OCT 2000
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Section 00600 - Representations & Certifications

CLAUSES INCORPORATED BY FULL TEXT

52.203-11 CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (APR 1991)

(a) The definitions and prohibitions contained in the clause, at FAR 52.203-12, Limitation on Payments to Influence Certain Federal Transactions, included in this solicitation, are hereby incorporated by reference in paragraph (b) of this Certification.

(b) The offeror, by signing its offer, hereby certifies to the best of his or her knowledge and belief that on or after December 23, 1989,--

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan, or cooperative agreement;

(2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the offeror shall complete and submit, with its offer, OMB standard form LLL, Disclosure of Lobbying Activities, to the Contracting Officer; and

(3) He or she will include the language of this certification in all subcontract awards at any tier and require that all recipients of subcontract awards in excess of \$100,000 shall certify and disclose accordingly.

(c) Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision, shall be subject to a civil penalty of not less than \$10,000, and not more than \$100,000, for each such failure.

(End of provision)

52.204-3 TAXPAYER IDENTIFICATION (OCT 1998)

(a) Definitions.

“Common parent,” as used in this provision, means that corporate entity that owns or controls an affiliated group of corporations that files its Federal income tax returns on a consolidated basis, and of which the offeror is a member.

“Taxpayer Identification Number (TIN),” as used in this provision, means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a Social Security Number or an Employer Identification Number.

(b) All offerors must submit the information required in paragraphs (d) through (f) of this provision to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d), reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the IRS. If the resulting contract is subject to the payment reporting

requirements described in Federal Acquisition Regulation (FAR) 4.904, the failure or refusal by the offeror to furnish the information may result in a 31 percent reduction of payments otherwise due under the contract.

(c) The TIN may be used by the Government to collect and report on any delinquent amounts arising out of the offeror's relationship with the Government (31 U.S.C. 7701(c)(3)). If the resulting contract is subject to the payment reporting requirements described in FAR 4.904, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

(d) Taxpayer Identification Number (TIN).

___ TIN: _____

___ TIN has been applied for.

___ TIN is not required because:

___ Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

___ Offeror is an agency or instrumentality of a foreign government;

___ Offeror is an agency or instrumentality of the Federal Government.

(e) Type of organization.

___ Sole proprietorship;

___ Partnership;

___ Corporate entity (not tax-exempt);

___ Corporate entity (tax-exempt);

___ Government entity (Federal, State, or local);

___ Foreign government;

___ International organization per 26 CFR 1.6049-4;

___ Other _____

(f) Common parent.

___ Offeror is not owned or controlled by a common parent as defined in paragraph (a) of this provision.

___ Name and TIN of common parent:

Name _____

TIN _____

(End of provision)

52.219-1 SMALL BUSINESS PROGRAM REPRESENTATIONS (APR 2002) - ALTERNATE I (APR 2002)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is **237990**.

(2) The small business size standard is **\$27.5 million average annual receipts for the past three years**.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b) Representations. (1) The offeror represents as part of its offer that it () is, () is not a small business concern.

(2) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents, for general statistical purposes, that it () is, () is not a small disadvantaged business concern as defined in 13 CFR 124.1002.

(3) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it () is, () is not a women-owned small business concern.

(4) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it () is, () is not a veteran-owned small business concern.

(5) (Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (b)(4) of this provision.) The offeror represents as part of its offer that it () is, () is not a service-disabled veteran-owned small business concern.

(6) [Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.] The offeror represents, as part of its offer, that--

(i) It () is, () is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR part 126; and

(ii) It () is, () is not a joint venture that complies with the requirements of 13 CFR part 126, and the representation in paragraph (b)(6)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. (The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture:_____.) Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(7) (Complete if offeror represented itself as disadvantaged in paragraph (b)(2) of this provision.) The offeror shall check the category in which its ownership falls:

____ Black American.

____ Hispanic American.

____ Native American (American Indians, Eskimos, Aleuts, or Native Hawaiians).

____ Asian-Pacific American (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the

Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru).

_____ Subcontinent Asian (Asian-Indian) American (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal).

_____ Individual/concern, other than one of the preceding.

(c) Definitions. As used in this provision--

Service-disabled veteran-owned small business concern--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

"Small business concern," means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR Part 121 and the size standard in paragraph (a) of this provision.

Veteran-owned small business concern means a small business concern--

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

"Women-owned small business concern," means a small business concern --

(1) That is at least 51 percent owned by one or more women or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; or

(2) Whose management and daily business operations are controlled by one or more women.

(d) Notice.

(1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.

(2) Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a small, HUBZone small, small disadvantaged, or women-owned small business concern in order to obtain a contract to be awarded under the preference programs established pursuant to section 8(a), 8(d), 9, or 15 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall--

- (i) Be punished by imposition of fine, imprisonment, or both;
- (ii) Be subject to administrative remedies, including suspension and debarment; and
- (iii) Be ineligible for participation in programs conducted under the authority of the Act.

(End of provision)

52.219-22 SMALL DISADVANTAGED BUSINESS STATUS (OCT 1999)

(a) General. This provision is used to assess an offeror's small disadvantaged business status for the purpose of obtaining a benefit on this solicitation. Status as a small business and status as a small disadvantaged business for general statistical purposes is covered by the provision at FAR 52.219-1, Small Business Program Representation.

(b) Representations.

(1) General. The offeror represents, as part of its offer, that it is a small business under the size standard applicable to this acquisition; and either--

___ (i) It has received certification by the Small Business Administration as a small disadvantaged business concern consistent with 13 CFR 124, Subpart B; and

(A) No material change in disadvantaged ownership and control has occurred since its certification;

(B) Where the concern is owned by one or more disadvantaged individuals, the net worth of each individual upon whom the certification is based does not exceed \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and

(C) It is identified, on the date of this representation, as a certified small disadvantaged business concern in the database maintained by the Small Business Administration (PRO0Net); or

___ (ii) It has submitted a completed application to the Small Business Administration or a Private Certifier to be certified as a small disadvantaged business concern in accordance with 13 CFR 124, Subpart B, and a decision on that application is pending, and that no material change in disadvantaged ownership and control has occurred since its application was submitted.

(2)___ For Joint Ventures. The offeror represents, as part of its offer, that it is a joint venture that complies with the requirements at 13 CFR 124.1002(f) and that the representation in paragraph (b)(1) of this provision is accurate for the small disadvantaged business concern that is participating in the joint venture. [The offeror shall enter the name of the small disadvantaged business concern that is participating in the joint venture: _____.]

(c) Penalties and Remedies. Anyone who misrepresents any aspects of the disadvantaged status of a concern for the purposes of securing a contract or subcontract shall:

- (1) Be punished by imposition of a fine, imprisonment, or both;
- (2) Be subject to administrative remedies, including suspension and debarment; and
- (3) Be ineligible for participation in programs conducted under the authority of the Small Business Act.

(End of provision)

52.222-22 PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FEB 1999)

The offeror represents that --

- (a) ☐ It has, ☐ has not participated in a previous contract or subcontract subject to the Equal Opportunity clause of this solicitation;
- (b) ☐ It has, ☐ has not, filed all required compliance reports; and
- (c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

(End of provision)

52.222-38 COMPLIANCE WITH VETERANS' EMPLOYMENT REPORTING REQUIREMENTS (DEC 2001)

By submission of its offer, the offeror represents that, if it is subject to the reporting requirements of 38 U.S.C. 4212(d) (i.e., if it has any contract containing Federal Acquisition Regulation clause 52.222-37, Employment Reports on Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans), it has submitted the most recent VETS-100 Report required by that clause.

(End of provision)

52.223-13 CERTIFICATION OF TOXIC CHEMICAL RELEASE REPORTING (OCT 2000)

(a) Submission of this certification is a prerequisite for making or entering into this contract imposed by Executive Order 12969, August 8, 1995.

(b) By signing this offer, the offeror certifies that--

(1) As the owner or operator of facilities that will be used in the performance of this contract that are subject to the filing and reporting requirements described in section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023) and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106), the offeror will file and continue to file for such facilities for the life of the contract the Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of EPCRA and section 6607 of PPA; or

(2) None of its owned or operated facilities to be used in the performance of this contract is subject to the Form R filing and reporting requirements because each such facility is exempt for at least one of the following reasons:
(Check each block that is applicable.)

☐ (i) The facility does not manufacture, process or otherwise use any toxic chemicals listed under section 313(c) of EPCRA, 42 U.S.C. 11023(c);

☐ (ii) The facility does not have 10 or more full-time employees as specified in section 313.(b)(1)(A) of EPCRA 42 U.S.C. 11023(b)(1)(A);

☐ (iii) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

() (iv) The facility does not fall within Standard Industrial Classification Code (SIC) major groups 20 through 39 or their corresponding North American Industry Classification System (NAICS) sectors 31 through 33; or

() (v) The facility is not located within any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, or any other territory or possession over which the United States has jurisdiction.

(End of clause)

252.209-7001 DISCLOSURE OF OWNERSHIP OR CONTROL BY THE GOVERNMENT OF A TERRORIST COUNTRY (MAR 1998)

(a) "Definitions."

As used in this provision --

(a) "Government of a terrorist country" includes the state and the government of a terrorist country, as well as any political subdivision, agency, or instrumentality thereof.

(2) "Terrorist country" means a country determined by the Secretary of State, under section 6(j)(1)(A) of the Export Administration Act of 1979 (50 U.S.C. App. 2405(j)(i)(A)), to be a country the government of which has repeatedly provided support for such acts of international terrorism. As of the date of this provision, terrorist countries include: Cuba, Iran, Iraq, Libya, North Korea, Sudan, and Syria.

(3) "Significant interest" means --

(i) Ownership of or beneficial interest in 5 percent or more of the firm's or subsidiary's securities. Beneficial interest includes holding 5 percent or more of any class of the firm's securities in "nominee shares," "street names," or some other method of holding securities that does not disclose the beneficial owner;

(ii) Holding a management position in the firm, such as a director or officer;

(iii) Ability to control or influence the election, appointment, or tenure of directors or officers in the firm;

(iv) Ownership of 10 percent or more of the assets of a firm such as equipment, buildings, real estate, or other tangible assets of the firm; or

(v) Holding 50 percent or more of the indebtedness of a firm.

(b) "Prohibition on award."

In accordance with 10 U.S.C. 2327, no contract may be awarded to a firm or a subsidiary of a firm if the government of a terrorist country has a significant interest in the firm or subsidiary or, in the case of a subsidiary, the firm that owns the subsidiary, unless a waiver is granted by the Secretary of Defense.

(c) "Disclosure."

If the government of a terrorist country has a significant interest in the Offeror or a subsidiary of the Offeror, the Offeror shall disclose such interest in an attachment to its offer. If the Offeror is a subsidiary, it shall also disclose any significant interest the government of a terrorist country has in any firm that owns or controls the subsidiary. The disclosure shall include --

(1) Identification of each government holding a significant interest; and

(2) A description of the significant interest held by each government.

(End of provision)

252.247-7022 REPRESENTATION OF EXTENT OF TRANSPORTATION BY SEA (AUG 1992)

(a) The Offeror shall indicate by checking the appropriate blank in paragraph (b) of this provision whether transportation of supplies by sea is anticipated under the resultant contract. The term supplies is defined in the Transportation of Supplies by Sea clause of this solicitation.

(b) Representation. The Offeror represents that it:

____ (1) Does anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

____ (2) Does not anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

(c) Any contract resulting from this solicitation will include the Transportation of Supplies by Sea clause. If the Offeror represents that it will not use ocean transportation, the resulting contract will also include the Defense FAR Supplement clause at 252.247-7024, Notification of Transportation of Supplies by Sea.

(End of provision)

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52.209-6	Protecting the Government's Interest When Subcontracting With Contractors Debarred, Suspended, or Proposed for Debarment	JUL 1995
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252.243-7001	Pricing Of Contract Modifications	DEC 1991
252.243-7002	Requests for Equitable Adjustment	MAR 1998
252.244-7000	Subcontracts for Commercial Items and Commercial Components (DoD Contracts)	MAR 2000
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Section 00700 - Contract Clauses

CLAUSES INCORPORATED BY FULL TEXT

52.202-1 DEFINITIONS (MAY 2001) --ALTERNATE I (MAR 2001)

(a) Agency head or head of the agency means the Secretary (Attorney General, Administrator, Governor, Chairperson, or other chief official, as appropriate) of the agency, unless otherwise indicated, including any deputy or assistant chief official of the executive agency.

(b) Commercial component means any component that is a commercial item.

(c) Component means any item supplied to the Government as part of an end item or of another component, except that for use in 52.225-9, and 52.225-11 see the definitions in 52.225-9(a) and 52.225-11(a).

(d) Contracting Officer means a person with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings. The term includes certain authorized representatives of the Contracting Officer acting within the limits of their authority as delegated by the Contracting Officer.

(e) Nondevelopmental item means--

(1) Any previously developed item of supply used exclusively for governmental purposes by a Federal agency, a State or local government, or a foreign government with which the United States has a mutual defense cooperation agreement;

(2) Any item described in paragraph (f)(1) of this definition that requires only minor modification or modifications of a type customarily available in the commercial marketplace in order to meet the requirements of the procuring department or agency; or

(3) Any item of supply being produced that does not meet the requirements of paragraph (f)(1) or (f)(2) solely because the item is not yet in use.

(f) "Contracting Officer" means a person with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings. The term includes certain authorized representatives of the Contracting Officer acting within the limits of their authority as delegated by the Contracting Officer.

(g) Except as otherwise provided in this contract, the term "subcontracts" includes, but is not limited to, purchase orders and changes and modifications to purchase orders under this contract.

(End of clause)

52.203-3 GRATUITIES (APR 1984)

(a) The right of the Contractor to proceed may be terminated by written notice if, after notice and hearing, the agency head or a designee determines that the Contractor, its agent, or another representative--

(1) Offered or gave a gratuity (e.g., an entertainment or gift) to an officer, official, or employee of the Government; and

(2) Intended, by the gratuity, to obtain a contract or favorable treatment under a contract.

(b) The facts supporting this determination may be reviewed by any court having lawful jurisdiction.

(c) If this contract is terminated under paragraph (a) of this clause, the Government is entitled--

(1) To pursue the same remedies as in a breach of the contract; and

(2) In addition to any other damages provided by law, to exemplary damages of not less than 3 nor more than 10 times the cost incurred by the Contractor in giving gratuities to the person concerned, as determined by the agency head or a designee. (This subparagraph (c)(2) is applicable only if this contract uses money appropriated to the Department of Defense.)

(d) The rights and remedies of the Government provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

52.203-5 COVENANT AGAINST CONTINGENT FEES (APR 1984)

(a) The Contractor warrants that no person or agency has been employed or retained to solicit or obtain this contract upon an agreement or understanding for a contingent fee, except a bona fide employee or agency. For breach or violation of this warranty, the Government shall have the right to annul this contract without liability or, in its discretion, to deduct from the contract price or consideration, or otherwise recover, the full amount of the contingent fee.

(b) "Bona fide agency," as used in this clause, means an established commercial or selling agency, maintained by a contractor for the purpose of securing business, that neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds itself out as being able to obtain any Government contract or contracts through improper influence.

"Bona fide employee," as used in this clause, means a person, employed by a contractor and subject to the contractor's supervision and control as to time, place, and manner of performance, who neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds out as being able to obtain any Government contract or contracts through improper influence.

"Contingent fee," as used in this clause, means any commission, percentage, brokerage, or other fee that is contingent upon the success that a person or concern has in securing a Government contract.

"Improper influence," as used in this clause, means any influence that induces or tends to induce a Government employee or officer to give consideration or to act regarding a Government contract on any basis other than the merits of the matter.

(End of clause)

52.203-6 RESTRICTIONS ON SUBCONTRACTOR SALES TO THE GOVERNMENT (JUL 1995)

(a) Except as provided in (b) of this clause, the Contractor shall not enter into any agreement with an actual or prospective subcontractor, nor otherwise act in any manner, which has or may have the effect of restricting sales by such subcontractors directly to the Government of any item or process (including computer software) made or furnished by the subcontractor under this contract or under any follow-on production contract.

(b) The prohibition in (a) of this clause does not preclude the Contractor from asserting rights that are otherwise authorized by law or regulation.

(c) The Contractor agrees to incorporate the substance of this clause, including this paragraph (c), in all subcontracts under this contract which exceed \$100,000.

52.203-7 ANTI-KICKBACK PROCEDURES. (JUL 1995)

(a) Definitions.

"Kickback," as used in this clause, means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided, directly or indirectly, to any prime Contractor, prime Contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a subcontract relating to a prime contract.

"Person," as used in this clause, means a corporation, partnership, business association of any kind, trust, joint-stock company, or individual.

"Prime contract," as used in this clause, means a contract or contractual action entered into by the United States for the purpose of obtaining supplies, materials, equipment, or services of any kind.

"Prime Contractor," as used in this clause, means a person who has entered into a prime contract with the United States.

"Prime Contractor employee," as used in this clause, means any officer, partner, employee, or agent of a prime Contractor.

"Subcontract," as used in this clause, means a contract or contractual action entered into by a prime Contractor or subcontractor for the purpose of obtaining supplies, materials, equipment, or services of any kind under a prime contract.

"Subcontractor," as used in this clause, (1) means any person, other than the prime Contractor, who offers to furnish or furnishes any supplies, materials, equipment, or services of any kind under a prime contract or a subcontract entered into in connection with such prime contract, and (2) includes any person who offers to furnish or furnishes general supplies to the prime Contractor or a higher tier subcontractor.

"Subcontractor employee," as used in this clause, means any officer, partner, employee, or agent of a subcontractor.

(b) The Anti-Kickback Act of 1986 (41 U.S.C. 51-58) (the Act), prohibits any person from -

(1) Providing or attempting to provide or offering to provide any kickback;

(2) Soliciting, accepting, or attempting to accept any kickback; or

(3) Including, directly or indirectly, the amount of any kickback in the contract price charged by a prime Contractor to the United States or in the contract price charged by a subcontractor to a prime Contractor or higher tier subcontractor.

(c)(1) The Contractor shall have in place and follow reasonable procedures designed to prevent and detect possible violations described in paragraph (b) of this clause in its own operations and direct business relationships.

(2) When the Contractor has reasonable grounds to believe that a violation described in paragraph (b) of this clause may have occurred, the Contractor shall promptly report in writing the possible violation. Such reports shall be made to the inspector general of the contracting agency, the head of the contracting agency if the agency does not have an inspector general, or the Department of Justice.

(3) The Contractor shall cooperate fully with any Federal agency investigating a possible violation described in paragraph (b) of this clause.

(4) The Contracting Officer may (i) offset the amount of the kickback against any monies owed by the United States under the prime contract and/or (ii) direct that the Prime Contractor withhold, from sums owed a subcontractor under the prime contract, the amount of any kickback. The Contracting Officer may order the monies withheld under subdivision (c)(4)(ii) of this clause be paid over to the Government unless the Government has already offset those monies under subdivision (c)(4)(i) of this clause. In either case, the Prime Contractor shall notify the Contracting Officer when the monies are withheld.

(5) The Contractor agrees to incorporate the substance of this clause, including this subparagraph (c)(5) but excepting subparagraph (c)(1), in all subcontracts under this contract which exceed \$100,000.

52.203-8 CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)

(a) If the Government receives information that a contractor or a person has engaged in conduct constituting a violation of subsection (a), (b), (c), or (d) of Section 27 of the Office of Federal Procurement Policy Act (41 U.S.C. 423) (the Act), as amended by section 4304 of the 1996 National Defense Authorization Act for Fiscal Year 1996 (Pub. L. 104-106), the Government may--

(1) Cancel the solicitation, if the contract has not yet been awarded or issued; or

(2) Rescind the contract with respect to which--

(i) The Contractor or someone acting for the Contractor has been convicted for an offense where the conduct constitutes a violation of subsection 27(a) or (b) of the Act for the purpose of either--

(A) Exchanging the information covered by such subsections for anything of value; or

(B) Obtaining or giving anyone a competitive advantage in the award of a Federal agency procurement contract; or

(ii) The head of the contracting activity has determined, based upon a preponderance of the evidence, that the Contractor or someone acting for the Contractor has engaged in conduct constituting an offense punishable under subsections 27(e)(1) of the Act.

(b) If the Government rescinds the contract under paragraph (a) of this clause, the Government is entitled to recover, in addition to any penalty prescribed by law, the amount expended under the contract.

(c) The rights and remedies of the Government specified herein are not exclusive, and are in addition to any other rights and remedies provided by law, regulation, or under this contract.

(End of clause)

52.203-10 PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)

(a) The Government, at its election, may reduce the price of a fixed-price type contract and the total cost and fee under a cost-type contract by the amount of profit or fee determined as set forth in paragraph (b) of this clause if the head of the contracting activity or designee determines that there was a violation of subsection 27 (a), (b), or (c) of the Office of Federal Procurement Policy Act, as amended (41 U.S.C. 423), as implemented in section 3.104 of the Federal Acquisition Regulation.

(b) The price or fee reduction referred to in paragraph (a) of this clause shall be--

(1) For cost-plus-fixed-fee contracts, the amount of the fee specified in the contract at the time of award;

(2) For cost-plus-incentive-fee contracts, the target fee specified in the contract at the time of award, notwithstanding any minimum fee or "fee floor" specified in the contract;

(3) For cost-plus-award-fee contracts--

(i) The base fee established in the contract at the time of contract award;

(ii) If no base fee is specified in the contract, 30 percent of the amount of each award fee otherwise payable to the Contractor for each award fee evaluation period or at each award fee determination point.

(4) For fixed-price-incentive contracts, the Government may--

(i) Reduce the contract target price and contract target profit both by an amount equal to the initial target profit specified in the contract at the time of contract award; or

(ii) If an immediate adjustment to the contract target price and contract target profit would have a significant adverse impact on the incentive price revision relationship under the contract, or adversely affect the contract financing provisions, the Contracting Officer may defer such adjustment until establishment of the total final price of the contract. The total final price established in accordance with the incentive price revision provisions of the contract shall be reduced by an amount equal to the initial target profit specified in the contract at the time of contract award and such reduced price shall be the total final contract price.

(5) For firm-fixed-price contracts, by 10 percent of the initial contract price or a profit amount determined by the Contracting Officer from records or documents in existence prior to the date of the contract award.

(c) The Government may, at its election, reduce a prime contractor's price or fee in accordance with the procedures of paragraph (b) of this clause for violations of the Act by its subcontractors by an amount not to exceed the amount of profit or fee reflected in the subcontract at the time the subcontract was first definitively priced.

(d) In addition to the remedies in paragraphs (a) and (c) of this clause, the Government may terminate this contract for default. The rights and remedies of the Government specified herein are not exclusive, and are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

52.203-12 LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (JUN 1997)

(a) Definitions.

"Agency," as used in this clause, means executive agency as defined in 2.101.

"Covered Federal action," as used in this clause, means any of the following Federal actions:

- (1) The awarding of any Federal contract.
- (2) The making of any Federal grant.
- (3) The making of any Federal loan.
- (4) The entering into of any cooperative agreement.
- (5) The extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

"Indian tribe" and "tribal organization," as used in this clause, have the meaning provided in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B) and include Alaskan Natives.

"Influencing or attempting to influence," as used in this clause, means making, with the intent to influence, any communication to or appearance before an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any covered Federal action.

"Local government," as used in this clause, means a unit of government in a State and, if chartered, established, or otherwise recognized by a State for the performance of a governmental duty, including a local public authority, a special district, an intrastate district, a council of governments, a sponsor group representative organization, and any other instrumentality of a local government.

"Officer or employee of an agency," as used in this clause, includes the following individuals who are employed by an agency:

- (1) An individual who is appointed to a position in the Government under Title 5, United States Code, including a position under a temporary appointment.
- (2) A member of the uniformed services, as defined in subsection 101(3), Title 37, United States Code.
- (3) A special Government employee, as defined in section 202, Title 18, United States Code.
- (4) An individual who is a member of a Federal advisory committee, as defined by the Federal Advisory Committee Act, Title 5, United States Code, appendix 2.

"Person," as used in this clause, means an individual, corporation, company, association, authority, firm, partnership, society, State, and local government, regardless of whether such entity is operated for profit, or not for profit. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Reasonable compensation," as used in this clause, means, with respect to a regularly employed officer or employee of any person, compensation that is consistent with the normal compensation for such officer or employee for work that is not furnished to, not funded by, or not furnished in cooperation with the Federal Government.

"Reasonable payment," as used in this clause, means, with respect to professional and other technical services, a payment in an amount that is consistent with the amount normally paid for such services in the private sector.

"Recipient," as used in this clause, includes the Contractor and all subcontractors. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Regularly employed," as used in this clause, means, with respect to an officer or employee of a person requesting or receiving a Federal contract, an officer or employee who is employed by such person for at least 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person for receipt of such contract. An officer or employee who is employed by such person for less than 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person shall be considered to be regularly employed as soon as he or she is employed by such person for 130 working days.

"State," as used in this clause, means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, a territory or possession of the United States, an agency or instrumentality of a State, and multi-State, regional, or interstate entity having governmental duties and powers.

(b) Prohibitions.

(1) Section 1352 of Title 31, United States Code, among other things, prohibits a recipient of a Federal contract, grant, loan, or cooperative agreement from using appropriated funds to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract; the making of any Federal grant; the making of any Federal loan; the entering into of any cooperative agreement; or the modification of any Federal contract, grant, loan, or cooperative agreement.

(2) The Act also requires Contractors to furnish a disclosure if any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a Federal contract, grant, loan, or cooperative agreement.

(3) The prohibitions of the Act do not apply under the following conditions:

(i) Agency and legislative liaison by own employees.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of a payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action if the payment is for agency and legislative liaison activities not directly related to a covered Federal action.

(B) For purposes of subdivision (b)(3)(i)(A) of this clause, providing any information specifically requested by an agency or Congress is permitted at any time.

(C) The following agency and legislative liaison activities are permitted at any time where they are not related to a specific solicitation for any covered Federal action:

(1) Discussing with an agency the qualities and characteristics (including individual demonstrations) of the person's products or services, conditions or terms of sale, and service capabilities.

(2) Technical discussions and other activities regarding the application or adaptation of the person's products or services for an agency's use.

(D) The following agency and legislative liaison activities are permitted where they are prior to formal solicitation of any covered Federal action--

(1) Providing any information not specifically requested but necessary for an agency to make an informed decision about initiation of a covered Federal action;

(2) Technical discussions regarding the preparation of an unsolicited proposal prior to its official submission; and

(3) Capability presentations by persons seeking awards from an agency pursuant to the provisions of the Small Business Act, as amended by Pub. L. 95-507, and subsequent amendments.

(E) Only those services expressly authorized by subdivision (b)(3)(i)(A) of this clause are permitted under this clause.

(ii) Professional and technical services.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of--

(1) A payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action, if payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action.

(2) Any reasonable payment to a person, other than an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action if the payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action. Persons other than officers or employees of a person requesting or receiving a covered Federal action include consultants and trade associations.

(B) For purposes of subdivision (b)(3)(ii)(A) of this clause, "professional and technical services" shall be limited to advice and analysis directly applying any professional or technical discipline. For example, drafting of a legal document accompanying a bid or proposal by a lawyer is allowable. Similarly, technical advice provided by an engineer on the performance or operational capability of a piece of equipment rendered directly in the negotiation of a contract is allowable. However, communications with the intent to influence made by a professional (such as a licensed lawyer) or a technical person (such as a licensed accountant) are not allowable under this section unless they provide advice and analysis directly applying their professional or technical expertise and unless the advice or analysis is rendered directly and solely in the preparation, submission or negotiation of a covered Federal action. Thus, for example, communications with the intent to influence made by a lawyer that do not provide legal advice or analysis directly and solely related to the legal aspects of his or her client's proposal, but generally advocate one proposal over another are not allowable under this section because the lawyer is not providing professional legal services. Similarly, communications with the intent to influence made by an engineer providing an engineering analysis prior to the preparation or submission of a bid or proposal are not allowable under this section since the engineer is providing technical services but not directly in the preparation, submission or negotiation of a covered Federal action.

(C) Requirements imposed by or pursuant to law as a condition for receiving a covered Federal award include those required by law or regulation and any other requirements in the actual award documents.

(D) Only those services expressly authorized by subdivisions (b)(3)(ii)(A)(1) and (2) of this clause are permitted under this clause.

(E) The reporting requirements of FAR 3.803(a) shall not apply with respect to payments of reasonable compensation made to regularly employed officers or employees of a person.

(c) Disclosure.

(1) The Contractor who requests or receives from an agency a Federal contract shall file with that agency a disclosure form, OMB standard form LLL, Disclosure of Lobbying Activities, if such person has made or has agreed to make any payment using nonappropriated funds (to include profits from any covered Federal action), which would be prohibited under subparagraph (b)(1) of this clause, if paid for with appropriated funds.

(2) The Contractor shall file a disclosure form at the end of each calendar quarter in which there occurs any event that materially affects the accuracy of the information contained in any disclosure form previously filed by such person under subparagraph (c)(1) of this clause. An event that materially affects the accuracy of the information reported includes--

(i) A cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or

(ii) A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or

(iii) A change in the officer(s), employee(s), or Member(s) contacted to influence or attempt to influence a covered Federal action.

(3) The Contractor shall require the submittal of a certification, and if required, a disclosure form by any person who requests or receives any subcontract exceeding \$100,000 under the Federal contract.

(4) All subcontractor disclosure forms (but not certifications) shall be forwarded from tier to tier until received by the prime Contractor. The prime Contractor shall submit all disclosures to the Contracting Officer at the end of the calendar quarter in which the disclosure form is submitted by the subcontractor. Each subcontractor certification shall be retained in the subcontract file of the awarding Contractor.

(d) Agreement. The Contractor agrees not to make any payment prohibited by this clause.

(e) Penalties.

(1) Any person who makes an expenditure prohibited under paragraph (a) of this clause or who fails to file or amend the disclosure form to be filed or amended by paragraph (b) of this clause shall be subject to civil penalties as provided for by 31 U.S.C. 1352. An imposition of a civil penalty does not prevent the Government from seeking any other remedy that may be applicable.

(2) Contractors may rely without liability on the representation made by their subcontractors in the certification and disclosure form.

(f) Cost allowability. Nothing in this clause makes allowable or reasonable any costs which would otherwise be unallowable or unreasonable. Conversely, costs made specifically unallowable by the requirements in this clause will not be made allowable under any other provision.

(End of clause)

52.204-4 PRINTED OR COPIED DOUBLE-SIDED ON RECYCLED PAPER (AUG 2000)

(a) Definitions. As used in this clause--

“Postconsumer material” means a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. Postconsumer material is a part of the broader category of “recovered material.” For paper and paper products, postconsumer material means “postconsumer fiber” defined by the U.S. Environmental Protection Agency (EPA) as--

(1) Paper, paperboard, and fibrous materials from retail stores, office buildings, homes, and so forth, after they have passed through their end-usage as a consumer item, including: used corrugated boxes; old newspapers; old magazines; mixed waste paper; tabulating cards; and used cordage; or

(2) All paper, paperboard, and fibrous materials that enter and are collected from municipal solid waste; but not

(3) Fiber derived from printers' over-runs, converters' scrap, and over-issue publications.

"Printed or copied double-sided" means printing or reproducing a document so that information is on both sides of a sheet of paper.

"Recovered material," for paper and paper products, is defined by EPA in its Comprehensive Procurement Guideline as "recovered fiber" and means the following materials:

(1) Postconsumer fiber; and

(2) Manufacturing wastes such as--

(i) Dry paper and paperboard waste generated after completion of the papermaking process (that is, those manufacturing operations up to and including the cutting and trimming of the paper machine reel into smaller rolls or rough sheets) including: envelope cuttings, bindery trimmings, and other paper and paperboard waste resulting from printing, cutting, forming, and other converting operations; bag, box, and carton manufacturing wastes; and butt rolls, mill wrappers, and rejected unused stock; and

(ii) Repulped finished paper and paperboard from obsolete inventories of paper and paperboard manufacturers, merchants, wholesalers, dealers, printers, converters, or others.

(b) In accordance with Section 101 of Executive Order 13101 of September 14, 1998, Greening the Government through Waste Prevention, Recycling, and Federal Acquisition, the Contractor is encouraged to submit paper documents, such as offers, letters, or reports, that are printed or copied double-sided on recycled paper that meet minimum content standards specified in Section 505 of Executive Order 13101, when not using electronic commerce methods to submit information or data to the Government.

(c) If the Contractor cannot purchase high-speed copier paper, offset paper, forms bond, computer printout paper, carbonless paper, file folders, white wove envelopes, writing and office paper, book paper, cotton fiber paper, and cover stock meeting the 30 percent postconsumer material standard for use in submitting paper documents to the Government, it should use paper containing no less than 20 percent postconsumer material. This lesser standard should be used only when paper meeting the 30 percent postconsumer material standard is not obtainable at a reasonable price or does not meet reasonable performance standards.

(End of clause)

52.209-6 PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT (JUL 1995)

(a) The Government suspends or debar Contractors to protect the Government's interests. The Contractor shall not enter into any subcontract in excess of the \$25,000 with a Contractor that is debarred, suspended, or proposed for debarment unless there is a compelling reason to do so.

(b) The Contractor shall require each proposed first-tier subcontractor, whose subcontract will exceed \$25,000, to disclose to the Contractor, in writing, whether as of the time of award of the subcontract, the subcontractor, or its principles, is or is not debarred, suspended, or proposed for debarment by the Federal Government.

(c) A corporate officer or a designee of the Contractor shall notify the Contracting Officer, in writing, before entering into a subcontract with a party that is debarred, suspended, or proposed for debarment (see FAR 9.404 for information on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs). The notice must include the following:

- (1) The name of the subcontractor.
- (2) The Contractor's knowledge of the reasons for the subcontractor being on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs.
- (3) The compelling reason(s) for doing business with the subcontractor notwithstanding its inclusion on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs.
- (4) The systems and procedures the Contractor has established to ensure that it is fully protecting the Government's interests when dealing with such subcontractor in view of the specific basis for the party's debarment, suspension, or proposed debarment.

(End of clause)

52.209-6 PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT (JUL 1995)

(a) The Government suspends or debar Contractors to protect the Government's interests. The Contractor shall not enter into any subcontract in excess of the \$25,000 with a Contractor that is debarred, suspended, or proposed for debarment unless there is a compelling reason to do so.

(b) The Contractor shall require each proposed first-tier subcontractor, whose subcontract will exceed \$25,000, to disclose to the Contractor, in writing, whether as of the time of award of the subcontract, the subcontractor, or its principles, is or is not debarred, suspended, or proposed for debarment by the Federal Government.

(c) A corporate officer or a designee of the Contractor shall notify the Contracting Officer, in writing, before entering into a subcontract with a party that is debarred, suspended, or proposed for debarment (see FAR 9.404 for information on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs). The notice must include the following:

- (1) The name of the subcontractor.
- (2) The Contractor's knowledge of the reasons for the subcontractor being on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs.
- (3) The compelling reason(s) for doing business with the subcontractor notwithstanding its inclusion on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs.
- (4) The systems and procedures the Contractor has established to ensure that it is fully protecting the Government's interests when dealing with such subcontractor in view of the specific basis for the party's debarment, suspension, or proposed debarment.

(End of clause)

52.211-10 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984)

The Contractor shall be required to (a) commence work under this contract within **ten (10) calendar days** after the date the Contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than **240 calendar days* after receipt of notice to proceed**. * The time stated for completion shall include final cleanup of the premises.

*The Contracting Officer shall specify either a number of days after the date the contractor receives the notice to proceed, or a calendar date.

(End of clause)

52.211-12 LIQUIDATED DAMAGES--CONSTRUCTION (SEP 2000)

(a) If the Contractor fails to complete the work within the time specified in the contract, the Contractor shall pay liquidated damages to the Government in the amount of **\$685.00** for each calendar day of delay until the work is completed or accepted.

(b) If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause.

(End of clause)

52.211-18 VARIATION IN ESTIMATED QUANTITY (APR 1984)

If the quantity of a unit-priced item in this contract is an estimated quantity and the actual quantity of the unit-priced item varies more than 15 percent above or below the estimated quantity, an equitable adjustment in the contract price shall be made upon demand of either party. The equitable adjustment shall be based upon any increase or decrease in costs due solely to the variation above 115 percent or below 85 percent of the estimated quantity. If the quantity variation is such as to cause an increase in the time necessary for completion, the Contractor may request, in writing, an extension of time, to be received by the Contracting Officer within 10 days from the beginning of the delay, or within such further period as may be granted by the Contracting Officer before the date of final settlement of the contract. Upon the receipt of a written request for an extension, the Contracting Officer shall ascertain the facts and make an adjustment for extending the completion date as, in the judgement of the Contracting Officer, is justified.

52.215-2 AUDIT AND RECORDS--NEGOTIATION (JUN 1999)

(a) As used in this clause, "records" includes books, documents, accounting procedures and practices, and other data, regardless of type and regardless of whether such items are in written form, in the form of computer data, or in any other form.

(b) Examination of costs. If this is a cost-reimbursement, incentive, time-and-materials, labor-hour, or price redeterminable contract, or any combination of these, the Contractor shall maintain and the Contracting Officer, or an authorized representative of the Contracting Officer, shall have the right to examine and audit all records and other evidence sufficient to reflect properly all costs claimed to have been incurred or anticipated to be incurred directly or indirectly in performance of this contract. This right of examination shall include inspection at all reasonable times of the Contractor's plants, or parts of them, engaged in performing the contract.

(c) Cost or pricing data. If the Contractor has been required to submit cost or pricing data in connection with any pricing action relating to this contract, the Contracting Officer, or an authorized representative of the Contracting Officer, in order to evaluate the accuracy, completeness, and currency of the cost or pricing data, shall have the right to examine and audit all of the Contractor's records, including computations and projections, related to--

- (1) The proposal for the contract, subcontract, or modification;
- (2) The discussions conducted on the proposal(s), including those related to negotiating;
- (3) Pricing of the contract, subcontract, or modification; or
- (4) Performance of the contract, subcontract or modification.

(d) Comptroller General--(1) The Comptroller General of the United States, or an authorized representative, shall have access to and the right to examine any of the Contractor's directly pertinent records involving transactions related to this contract or a subcontract hereunder.

(2) This paragraph may not be construed to require the Contractor or subcontractor to create or maintain any record that the Contractor or subcontractor does not maintain in the ordinary course of business or pursuant to a provision of law.

(e) Reports. If the Contractor is required to furnish cost, funding, or performance reports, the Contracting Officer or an authorized representative of the Contracting Officer shall have the right to examine and audit the supporting records and materials, for the purpose of evaluating (1) the effectiveness of the Contractor's policies and procedures to produce data compatible with the objectives of these reports and (2) the data reported.

(f) Availability. The Contractor shall make available at its office at all reasonable times the records, materials, and other evidence described in paragraphs (a), (b), (c), (d), and (e) of this clause, for examination, audit, or reproduction, until 3 years after final payment under this contract or for any shorter period specified in Subpart 4.7, Contractor Records Retention, of the Federal Acquisition Regulation (FAR), or for any longer period required by statute or by other clauses of this contract. In addition--

(1) If this contract is completely or partially terminated, the Contractor shall make available the records relating to the work terminated until 3 years after any resulting final termination settlement; and

(2) The Contractor shall make available records relating to appeals under the Disputes clause or to litigation or the settlement of claims arising under or relating to this contract until such appeals, litigation, or claims are finally resolved.

(g) The Contractor shall insert a clause containing all the terms of this clause, including this paragraph (g), in all subcontracts under this contract that exceed the simplified acquisition threshold, and--

- (1) That are cost-reimbursement, incentive, time-and-materials, labor-hour, or price-redeterminable type or any combination of these;
- (2) For which cost or pricing data are required; or
- (3) That require the subcontractor to furnish reports as discussed in paragraph (e) of this clause.

The clause may be altered only as necessary to identify properly the contracting parties and the Contracting Officer under the Government prime contract.

(End of clause)

52.215-11 PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA--MODIFICATIONS (OCT 1997)

(a) This clause shall become operative only for any modification to this contract involving a pricing adjustment expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4, except that this clause does not apply to any modification if an exception under FAR 15.403-1 applies.

(b) If any price, including profit or fee, negotiated in connection with any modification under this clause, or any cost reimbursable under this contract, was increased by any significant amount because (1) the Contractor or a subcontractor furnished cost or pricing data that were not complete, accurate, and current as certified in its Certificate of Current Cost or Pricing Data, (2) a subcontractor or prospective subcontractor furnished the Contractor cost or pricing data that were not complete, accurate, and current as certified in the Contractor's Certificate of Current Cost or Pricing Data, or (3) any of these parties furnished data of any description that were not accurate, the price or cost shall be reduced accordingly and the contract shall be modified to reflect the reduction. This right to a price reduction is limited to that resulting from defects in data relating to modifications for which this clause becomes operative under paragraph (a) of this clause.

(c) Any reduction in the contract price under paragraph (b) of this clause due to defective data from a prospective subcontractor that was not subsequently awarded the subcontract shall be limited to the amount, plus applicable overhead and profit markup, by which--

(1) The actual subcontract; or

(2) The actual cost to the Contractor, if there was no subcontract, was less than the prospective subcontract cost estimate submitted by the Contractor; provided, that the actual subcontract price was not itself affected by defective cost or pricing data.

(d)(1) If the Contracting Officer determines under paragraph (b) of this clause that a price or cost reduction should be made, the Contractor agrees not to raise the following matters as a defense:

(i) The Contractor or subcontractor was a sole source supplier or otherwise was in a superior bargaining position and thus the price of the contract would not have been modified even if accurate, complete, and current cost or pricing data had been submitted.

(ii) The Contracting Officer should have known that the cost or pricing data in issue were defective even though the Contractor or subcontractor took no affirmative action to bring the character of the data to the attention of the Contracting Officer.

(iii) The contract was based on an agreement about the total cost of the contract and there was no agreement about the cost of each item procured under the contract.

(iv) The Contractor or subcontractor did not submit a Certificate of Current Cost or Pricing Data.

(2)(i) Except as prohibited by subdivision (d)(2)(ii) of this clause, an offset in an amount determined appropriate by the Contracting Officer based upon the facts shall be allowed against the amount of a contract price reduction if--

(A) The Contractor certifies to the Contracting Officer that, to the best of the Contractor's knowledge and belief, the Contractor is entitled to the offset in the amount requested; and

(B) The Contractor proves that the cost or pricing data were available before the "as of" date specified on its Certificate of Current Cost or Pricing Data, and that the data were not submitted before such date.

(ii) An offset shall not be allowed if--

(A) The understated data were known by the Contractor to be understated before the "as of" date specified on its Certificate of Current Cost or Pricing Data; or

(B) The Government proves that the facts demonstrate that the contract price would not have increased in the amount to be offset even if the available data had been submitted before the "as of" date specified on its Certificate of Current Cost or Pricing Data.

(e) If any reduction in the contract price under this clause reduces the price of items for which payment was made prior to the date of the modification reflecting the price reduction, the Contractor shall be liable to and shall pay the United States at the time such overpayment is repaid--

(1) Simple interest on the amount of such overpayment to be computed from the date(s) of overpayment to the Contractor to the date the Government is repaid by the Contractor at the applicable underpayment rate effective for each quarter prescribed by the Secretary of the Treasury under 26 U.S.C. 6621(a)(2); and

A penalty equal to the amount of the overpayment, if the Contractor or subcontractor knowingly submitted cost or pricing data that were incomplete, inaccurate, or noncurrent.

(End of clause)

52.215-12 SUBCONTRACTOR COST OR PRICING DATA (OCT 1997)

(a) Before awarding any subcontract expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4, on the date of agreement on price or the date of award, whichever is later; or before pricing any subcontract modification involving a pricing adjustment expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4, the Contractor shall require the subcontractor to submit cost or pricing data (actually or by specific identification in writing), unless an exception under FAR 15.403-1 applies.

(b) The Contractor shall require the subcontractor to certify in substantially the form prescribed in FAR 15.406-2 that, to the best of its knowledge and belief, the data submitted under paragraph (a) of this clause were accurate, complete, and current as of the date of agreement on the negotiated price of the subcontract or subcontract modification.

(c) In each subcontract that exceeds the threshold for submission of cost or pricing data at FAR 15.403-4, when entered into, the Contractor shall insert either--

(1) The substance of this clause, including this paragraph (c), if paragraph (a) of this clause requires submission of cost or pricing data for the subcontract; or

(2) The substance of the clause at FAR 52.215-13, Subcontractor Cost or Pricing Data--Modifications.

52.215-13 SUBCONTRACTOR COST OR PRICING DATA--MODIFICATIONS (OCT 1997)

(a) The requirements of paragraphs (b) and (c) of this clause shall--

(1) Become operative only for any modification to this contract involving a pricing adjustment expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4; and

(2) Be limited to such modifications.

(b) Before awarding any subcontract expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4, on the date of agreement on price or the date of award, whichever is later; or before pricing any subcontract modification involving a pricing adjustment expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4, the Contractor shall require the subcontractor to submit cost or pricing data (actually or by specific identification in writing), unless an exception under FAR 15.403-1 applies.

(c) The Contractor shall require the subcontractor to certify in substantially the form prescribed in FAR 15.406-2 that, to the best of its knowledge and belief, the data submitted under paragraph (b) of this clause were accurate, complete, and current as of the date of agreement on the negotiated price of the subcontract or subcontract modification.

The Contractor shall insert the substance of this clause, including this paragraph (d), in each subcontract that exceeds the threshold for submission of cost or pricing data at FAR 15.403-4 on the date of agreement on price or the date of award, whichever is later.

(End of clause)

52.219-8 UTILIZATION OF SMALL BUSINESS CONCERNS (OCT 2000)

(a) It is the policy of the United States that small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns shall have the maximum practicable opportunity to participate in performing contracts let by any Federal agency, including contracts and subcontracts for subsystems, assemblies, components, and related services for major systems. It is further the policy of the United States that its prime contractors establish procedures to ensure the timely payment of amounts due pursuant to the terms of their subcontracts with small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns.

(b) The Contractor hereby agrees to carry out this policy in the awarding of subcontracts to the fullest extent consistent with efficient contract performance. The Contractor further agrees to cooperate in any studies or surveys as may be conducted by the United States Small Business Administration or the awarding agency of the United States as may be necessary to determine the extent of the Contractor's compliance with this clause.

Definitions. As used in this contract--

HUBZone small business concern means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

Service-disabled veteran-owned small business concern--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

Small business concern means a small business as defined pursuant to Section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto.

Small disadvantaged business concern means a small business concern that represents, as part of its offer that--

- (1) It has received certification as a small disadvantaged business concern consistent with 13 CFR part 124, subpart B;
- (2) No material change in disadvantaged ownership and control has occurred since its certification;
- (3) Where the concern is owned by one or more individuals, the net worth of each individual upon whom the certification is based does not exceed \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and
- (4) It is identified, on the date of its representation, as a certified small disadvantaged business in the database maintained by the Small Business Administration (PRO-Net).

Veteran-owned small business concern means a small business concern--

- (1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and
- (2) The management and daily business operations of which are controlled by one or more veterans.

Women-owned small business concern means a small business concern--

- (1) That is at least 51 percent owned by one or more women, or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and
- (2) Whose management and daily business operations are controlled by one or more women.
- (d) Contractors acting in good faith may rely on written representations by their subcontractors regarding their status as a small business concern, a veteran-owned small business concern, a service-disabled veteran-owned small business concern, a HUBZone small business concern, a small disadvantaged business concern, or a women-owned small business concern.

(End of clause)

52.219-14 LIMITATIONS ON SUBCONTRACTING (DEC 1996)

- (a) This clause does not apply to the unrestricted portion of a partial set-aside.
- (b) By submission of an offer and execution of a contract, the Offeror/Contractor agrees that in performance of the contract in the case of a contract for--
 - (1) Services (except construction). At least 50 percent of the cost of contract performance incurred for personnel shall be expended for employees of the concern.

(2) Supplies (other than procurement from a nonmanufacturer of such supplies). The concern shall perform work for at least 50 percent of the cost of manufacturing the supplies, not including the cost of materials.

(3) General construction. The concern will perform at least 15 percent of the cost of the contract, not including the cost of materials, with its own employees.

(4) Construction by special trade contractors. The concern will perform at least 25 percent of the cost of the contract, not including the cost of materials, with its own employees.

52.219-17 SECTION 8(a) AWARD (DEC 1996)

(a) By execution of a contract, the Small Business Administration (SBA) agrees to the following:

(1) To furnish the supplies or services set forth in the contract according to the specifications and the terms and conditions by subcontracting with the Offeror who has been determined an eligible concern pursuant to the provisions of section 8(a) of the Small Business Act, as amended (15 U.S.C. 637(a)).

(2) Except for novation agreements and advance payments, delegates to the **U.S. Army Corps of Engineers, St. Louis District**, the responsibility for administering the contract with complete authority to take any action on behalf of the Government under the terms and conditions of the contract; provided, however that the contracting agency shall give advance notice to the SBA before it issues a final notice terminating the right of the subcontractor to proceed with further performance, either in whole or in part, under the contract.

(3) That payments to be made under the contract will be made directly to the subcontractor by the contracting activity.

(4) To notify **U.S. Army Corps of Engineers, St. Louis District** Contracting Officer immediately upon notification by the subcontractor that the owner or owners upon whom 8(a) eligibility was based plan to relinquish ownership or control of the concern.

(5) That the subcontractor awarded a subcontract hereunder shall have the right of appeal from decisions of the cognizant Contracting Officer under the "Disputes" clause of the subcontract.

The offeror/subcontractor agrees and acknowledges that it will, for and on behalf of the SBA, fulfill and perform all of the requirements of the contract.

(c) The offeror/subcontractor agrees that it will not subcontract the performance of any of the requirements of this subcontract to any lower tier subcontractor without the prior written approval of the SBA and the cognizant Contracting Officer of the [insert name of contracting agency].

52.222-3 CONVICT LABOR (AUG 1996)

The Contractor agrees not to employ in the performance of this contract any person undergoing a sentence of imprisonment which has been imposed by any court of a State, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or the Trust Territory of the Pacific Islands. This limitation, however, shall not prohibit the employment by the Contractor in the performance of this contract of persons on parole or probation to work at paid employment during the term of their sentence or persons who have been pardoned or who have served their terms. Nor shall it prohibit the employment by the Contractor in the performance of this contract of persons confined for violation of the laws of any of the States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or the Trust Territory of the Pacific Islands who are authorized to work at paid employment in the community under the laws of such jurisdiction, if--

- (a)(1) The worker is paid or is in an approved work training program on a voluntary basis ;
- (2) Representatives of local union central bodies or similar labor union organizations have been consulted;
- (3) Such paid employment will not result in the displacement of employed workers, or be applied in skills, crafts, or trades in which there is a surplus of available gainful labor in the locality, or impair existing contracts for services; and
- (4) The rates of pay and other conditions of employment will not be less than those paid or provided for work of a similar nature in the locality in which the work is being performed; and
- (b) The Attorney General of the United States has certified that the work-release laws or regulations of the jurisdiction involved are in conformity with the requirements of Executive Order 11755, as amended by Executive Orders 12608 and 12943.

(End of clause)

52.222-4 CONTRACT WORK HOURS AND SAFETY STANDARDS ACT - OVERTIME COMPENSATION. (SEP 2000)

- (a) Overtime requirements. No Contractor or subcontractor employing laborers or mechanics (see Federal Acquisition Regulation 22.300) shall require or permit them to work over 40 hours in any workweek unless they are paid at least 1 and 1/2 times the basic rate of pay for each hour worked over 40 hours.
- (b) Violation; liability for unpaid wages; liquidated damages. The responsible Contractor and subcontractor are liable for unpaid wages if they violate the terms in paragraph (a) of this clause. In addition, the Contractor and subcontractor are liable for liquidated damages payable to the Government. The Contracting Officer will assess liquidated damages at the rate of \$10 per affected employee for each calendar day on which the employer required or permitted the employee to work in excess of the standard workweek of 40 hours without paying overtime wages required by the Contract Work Hours and Safety Standards Act.
- (c) Withholding for unpaid wages and liquidated damages. The Contracting Officer will withhold from payments due under the contract sufficient funds required to satisfy any Contractor or subcontractor liabilities for unpaid wages and liquidated damages. If amounts withheld under the contract are insufficient to satisfy Contractor or subcontractor liabilities, the Contracting Officer will withhold payments from other Federal or Federally assisted contracts held by the same Contractor that are subject to the Contract Work Hours and Safety Standards Act.
- (d) Payrolls and basic records.
 - (1) The Contractor and its subcontractors shall maintain payrolls and basic payroll records for all laborers and mechanics working on the contract during the contract and shall make them available to the Government until 3 years after contract completion. The records shall contain the name and address of each employee, social security number, labor classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. The records need not duplicate those required for construction work by Department of Labor regulations at 29 CFR 5.5(a)(3) implementing the Davis -Bacon Act.
 - (2) The Contractor and its subcontractors shall allow authorized representatives of the Contracting Officer or the Department of Labor to inspect, copy, or transcribe records maintained under paragraph (d)(1) of this clause. The Contractor or subcontractor also shall allow authorized representatives of the Contracting Officer or Department of Labor to interview employees in the workplace during working hours.

(e) Subcontracts. The Contractor shall insert the provisions set forth in paragraphs (a) through (d) of this clause in subcontracts exceeding \$100,000 and require subcontractors to include these provisions in any lower tier subcontracts. The Contractor shall be responsible for compliance by any subcontractor or lower-tier subcontractor with the provisions set forth in paragraphs (a) through (d) of this clause.

(End of clause)

52.222-6 DAVIS-BACON ACT (FEB 1995)

(a) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (d) of this clause; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such period. Such laborers and mechanics shall be paid not less than the appropriate wage rate and fringe benefits in the wage determination for the classification of work actually performed, without regard to skill, except as provided in the clause entitled Apprentices and Trainees. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph (b) of this clause) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(b)(1) The Contracting Officer shall require that any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The Contracting Officer shall approve an additional classification and wage rate and fringe benefits therefor only when all the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination.

(ii) The classification is utilized in the area by the construction industry.

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the Contracting Officer agree on the classification and wage rate (including the amount designated for fringe benefits, where appropriate), a report of the action taken shall be sent by the Contracting Officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator or an authorized representative will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the Contracting Officer or

will notify the Contracting Officer within the 30-day period that additional time is necessary.

(3) In the event the Contractor, the laborers or mechanics to be employed in the classification, or their representatives, and the Contracting Officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the Contracting Officer shall refer the questions, including the views of all interested parties and the recommendation of the Contracting Officer, to the Administrator of the Wage and Hour Division for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits, where appropriate) determined pursuant to subparagraphs (b)(2) and (b)(3) of this clause shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(c) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(c) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program; provided, That the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis -Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(End of clause)

52.222-7 WITHHOLDING OF FUNDS (FEB 1988)

The Contracting Officer shall, upon his or her own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same Prime Contractor, or any other Federally assisted contract subject to Davis -Bacon prevailing wage requirements, which is held by the same Prime Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the Contracting Officer may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(End of clause)

52.222-8 PAYROLLS AND BASIC RECORDS (FEB 1988)

(a) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of 3 years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis -Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. Whenever the Secretary of Labor has

found, under paragraph (d) of the clause entitled Davis -Bacon Act, that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis -Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(b)(1) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Contracting Officer. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under paragraph (a) of this clause. This information may be submitted in any form desired. Optional Form WH-347 (Federal Stock Number 029-005-00014-1) is available for this purpose and may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. The Prime Contractor is responsible for the submission of copies of payrolls by all subcontractors.

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify--

(i) That the payroll for the payroll period contains the information required to be maintained under paragraph (a) of this clause and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR Part 3; and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph (b)(2) of this clause.

(4) The falsification of any of the certifications in this clause may subject the Contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 3729 of Title 31 of the United States Code.

(c) The Contractor or subcontractor shall make the records required under paragraph (a) of this clause available for inspection, copying, or transcription by the Contracting Officer or authorized representatives of the Contracting Officer or the Department of Labor. The Contractor or subcontractor shall permit the Contracting Officer or representatives of the Contracting Officer or the Department of Labor to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit required records or to make them available, the Contracting Officer may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(End of clause)

(a) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in this paragraph, shall be paid not less than the applicable wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(b) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed in the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate in the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate in the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate in the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(c) Equal employment opportunity. The utilization of apprentices, trainees, and journeymen under this clause shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

(End of clause)

52.222-10 COMPLIANCE WITH COPELAND ACT REQUIREMENTS (FEB 1988)

The Contractor shall comply with the requirements of 29 CFR Part 3, which are hereby incorporated by reference in this contract.

(End of clause)

52.222-11 SUBCONTRACTS (LABOR STANDARDS (FEB 1988)

(a) The Contractor or subcontractor shall insert in any subcontracts the clauses entitled Davis -Bacon Act, Contract Work Hours and Safety Standards Act-Overtime Compensation, Apprentices and Trainees, Payrolls and Basic Records, Compliance with Copeland Act Requirements, Withholding of Funds, Subcontracts (Labor Standards), Contract Termination-Debarment, Disputes Concerning Labor Standards, Compliance with Davis -Bacon and Related Act Regulations, and Certification of Eligibility, and such other clauses as the Contracting Officer may, by appropriate instructions, require, and also a clause requiring subcontractors to include these clauses in any lower tier subcontracts. The Prime Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with all the contract clauses cited in this paragraph.

(b)(1) Within 14 days after award of the contract, the Contractor shall deliver to the Contracting Officer a completed Statement and Acknowledgment Form (SF 1413) for each subcontract, including the subcontractor's signed and dated acknowledgment that the clauses set forth in paragraph (a) of this clause have been included in the subcontract.

(2) Within 14 days after the award of any subsequently awarded subcontract the Contractor shall deliver to the Contracting Officer an updated completed SF 1413 for such additional subcontract.

(End of clause)

52.222-12 CONTRACT TERMINATION--DEBARMENT (FEB 1988)

A breach of the contract clauses entitled Davis -Bacon Act, Contract Work Hours and Safety Standards Act--Overtime Compensation, Apprentices and Trainees, Payrolls and Basic Records, Compliance with Copeland Act Requirements, Subcontracts (Labor Standards), Compliance with Davis -Bacon and Related Act Regulations, or Certification of Eligibility may be grounds for termination of the contract, and for debarment as a Contractor and subcontractor as provided in 29 CFR 5.12.

(End of clause)

52.222-13 COMPLIANCE WITH DAVIS-BACON AND RELATED ACT REGULATIONS (FEB 1988)

All rulings and interpretations of the Davis -Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are hereby incorporated by reference in this contract.

(End of clause)

52.222-14 DISPUTES CONCERNING LABOR STANDARDS (FEB 1988)

The United States Department of Labor has set forth in 29 CFR Parts 5, 6, and 7 procedures for resolving disputes concerning labor standards requirements. Such disputes shall be resolved in accordance with those procedures and

not the Disputes clause of this contract. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

(End of clause)

52.222-15 CERTIFICATION OF ELIGIBILITY (FEB 1988)

(a) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis -Bacon Act or 29 CFR 5.12(a)(1).

(b) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis -Bacon Act or 29 CFR 5.12(a)(1).

(d) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

(End of clause)

52.222-21 PROHIBITION OF SEGREGATED FACILITIES (FEB 1999)

(a) Segregated facilities, as used in this clause, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.

(b) The Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this clause is a violation of the Equal Opportunity clause in this contract.

(c) The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Opportunity clause of this contract.

(End of clause)

52.222-26 EQUAL OPPORTUNITY (APR 2002)

(a) Definition. United States, as used in this clause, means the 50 States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, and Wake Island.

(b) If, during any 12-month period (including the 12 months preceding the award of this contract), the Contractor has been or is awarded nonexempt Federal contracts and/or subcontracts that have an aggregate value in excess of \$10,000, the Contractor shall comply with paragraphs (b)(1) through (b)(11) of this clause, except for work performed outside the United States by employees who were not recruited within the United States. Upon request, the Contractor shall provide information necessary to determine the applicability of this clause.

(1) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. However, it shall not be a violation of this clause for the Contractor to extend a

publicly announced preference in employment to Indians living on or near an Indian reservation, in connection with employment opportunities on or near an Indian reservation, as permitted by 41 CFR 60-1.5.

(2) The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. This shall include, but not be limited to, (i) employment, (ii) upgrading, (iii) demotion, (iv) transfer, (v) recruitment or recruitment advertising, (vi) layoff or termination, (vii) rates of pay or other forms of compensation, and (viii) selection for training, including apprenticeship.

(3) The Contractor shall post in conspicuous places available to employees and applicants for employment the notices to be provided by the Contracting Officer that explain this clause.

(4) The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(5) The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be provided by the Contracting Officer advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.

(6) The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.

(7) The Contractor shall furnish to the contracting agency all information required by Executive Order 11246, as amended, and by the rules, regulations, and orders of the Secretary of Labor. The Contractor shall also file Standard Form 100 (EEO-1), or any successor form, as prescribed in 41 CFR part 60-1. Unless the Contractor has filed within the 12 months preceding the date of contract award, the Contractor shall, within 30 days after contract award, apply to either the regional Office of Federal Contract Compliance Programs (OFCCP) or the local office of the Equal Employment Opportunity Commission for the necessary forms.

(8) The Contractor shall permit access to its premises, during normal business hours, by the contracting agency or the OFCCP for the purpose of conducting on-site compliance evaluations and complaint investigations. The Contractor shall permit the Government to inspect and copy any books, accounts, records (including computerized records), and other material that may be relevant to the matter under investigation and pertinent to compliance with Executive Order 11246, as amended, and rules and regulations that implement the Executive Order.

(9) If the OFCCP determines that the Contractor is not in compliance with this clause or any rule, regulation, or order of the Secretary of Labor, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts, under the procedures authorized in Executive Order 11246, as amended. In addition, sanctions may be imposed and remedies invoked against the Contractor as provided in Executive Order 11246, as amended; in the rules, regulations, and orders of the Secretary of Labor; or as otherwise provided by law.

(10) The Contractor shall include the terms and conditions of subparagraphs (b)(1) through (11) of this clause in every subcontract or purchase order that is not exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order 11246, as amended, so that these terms and conditions will be binding upon each subcontractor or vendor.

(11) The Contractor shall take such action with respect to any subcontract or purchase order as the contracting officer may direct as a means of enforcing these terms and conditions, including sanctions for noncompliance; provided, that if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of any direction, the Contractor may request the United States to enter into the litigation to protect the

interests of the United States.

(c) Notwithstanding any other clause in this contract, disputes relative to this clause will be governed by the procedures in 41 CFR 60-1.1.

(End of clause)

52.222-27 AFFIRMATIVE ACTION COMPLIANCE REQUIREMENTS FOR CONSTRUCTION (FEB 1999)

(a) Definitions. "Covered area," as used in this clause, means the geographical area described in the solicitation for this contract.

"Deputy Assistant Secretary," as used in this clause, means Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, or a designee.

"Employer's identification number," as used in this clause, means the Federal Social Security number used on the employer's quarterly federal tax return, U.S. Treasury Department Form 941.

"Minority," as used in this clause, means--

(1) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

(2) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands);

(3) Black (all persons having origins in any of the black African racial groups not of Hispanic origin); and

(4) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race).

(b) If the Contractor, or a subcontractor at any tier, subcontracts a portion of the work involving any construction trade, each such subcontract in excess of \$10,000 shall include this clause and the Notice containing the goals for minority and female participation stated in the solicitation for this contract.

(c) If the Contractor is participating in a Hometown Plan (41 CFR 60-4) approved by the U.S. Department of Labor in a covered area, either individually or through an association, its affirmative action obligations on all work in the plan area (including goals) shall comply with the plan for those trades that have unions participating in the plan. Contractors must be able to demonstrate participation in, and compliance with, the provisions of the plan. Each Contractor or subcontractor participating in an approved plan is also required to comply with its obligations under the Equal Opportunity clause, and to make a good faith effort to achieve each goal under the plan in each trade in which it has employees. The overall good-faith performance by other Contractors or subcontractors toward a goal in an approved plan does not excuse any Contractor's or subcontractor's failure to make good-faith efforts to achieve the plan's goals.

(d) The Contractor shall implement the affirmative action procedures in subparagraphs (g)(1) through (16) of this clause. The goals stated in the solicitation for this contract are expressed as percentages of the total hours of employment and training of minority and female utilization that the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for the geographical area where that work is actually performed. The Contractor is expected to make substantially uniform

progress toward its goals in each craft.

(e) Neither the terms and conditions of any collective bargaining agreement, nor the failure by a union with which the Contractor has a collective bargaining agreement, to refer minorities or women shall excuse the Contractor's obligations under this clause, Executive Order 11246, as amended, or the regulations thereunder.

(f) In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

(g) The Contractor shall take affirmative action to ensure equal employment opportunity. The evaluation of the Contractor's compliance with this clause shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully and implement affirmative action steps at least as extensive as the following:

(1) Ensure a working environment free of harassment, intimidation, and coercion at all sites and in all facilities where the Contractor's employees are assigned to work. The Contractor, if possible, will assign two or more women to each construction project. The Contractor shall ensure that foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at these sites or facilities.

(2) Establish and maintain a current list of sources for minority and female recruitment. Provide written notification to minority and female recruitment sources and community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

(3) Establish and maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant, referrals of minorities or females from unions, recruitment sources, or community organizations, and the action taken with respect to each individual. If an individual was sent to the union hiring hall for referral and not referred back to the Contractor by the union or, if referred back, not employed by the Contractor, this shall be documented in the file, along with whatever additional actions the Contractor may have taken.

(4) Immediately notify the Deputy Assistant Secretary when the union or unions with which the Contractor has a collective bargaining agreement has not referred back to the Contractor a minority or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

(5) Develop on-the-job training opportunities and/or participate in training programs for the area that expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under subparagraph (g)(2) of this clause.

(6) Disseminate the Contractor's equal employment policy by--

(i) Providing notice of the policy to unions and to training, recruitment, and outreach programs, and requesting their cooperation in assisting the Contractor in meeting its contract obligations;

(ii) Including the policy in any policy manual and in collective bargaining agreements;

(iii) Publicizing the policy in the company newspaper, annual report, etc.;

(iv) Reviewing the policy with all management personnel and with all minority and female employees at least once a year; and

(v) Posting the policy on bulletin boards accessible to employees at each location where construction work is performed.

(7) Review, at least annually, the Contractor's equal employment policy and affirmative action obligations with all employees having responsibility for hiring, assignment, layoff, termination, or other employment decisions. Conduct review of this policy with all on-site supervisory personnel before initiating construction work at a job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

(8) Disseminate the Contractor's equal employment policy externally by including it in any advertising in the news media, specifically including minority and female news media. Provide written notification to, and discuss this policy with, other Contractors and subcontractors with which the Contractor does or anticipates doing business.

(9) Direct recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students, and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than 1 month before the date for acceptance of applications for apprenticeship or training by any recruitment source, send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

(10) Encourage present minority and female employees to recruit minority persons and women. Where reasonable, provide after-school, summer, and vacation employment to minority and female youth both on the site and in other areas of the Contractor's workforce.

(11) Validate all tests and other selection requirements where required under 41 CFR 60-3.

(12) Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities. Encourage these employees to seek or to prepare for, through appropriate training, etc., opportunities for promotion.

(13) Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment-related activities to ensure that the Contractor's obligations under this contract are being carried out.

(14) Ensure that all facilities and company activities are nonsegregated except that separate or single-user rest rooms and necessary dressing or sleeping areas shall be provided to assure privacy between the sexes.

(15) Maintain a record of solicitations for subcontracts for minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

(16) Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's equal employment policy and affirmative action obligations.

(h) The Contractor is encouraged to participate in voluntary associations that may assist in fulfilling one or more of the affirmative action obligations contained in subparagraphs (g)(1) through (16) of this clause. The efforts of a contractor association, joint contractor-union, contractor-community, or similar group of which the contractor is a member and participant may be asserted as fulfilling one or more of its obligations under subparagraphs (g)(1)

through (16) of this clause, provided the Contractor--

- (1) Actively participates in the group;
 - (2) Makes every effort to ensure that the group has a positive impact on the employment of minorities and women in the industry;
 - (3) Ensures that concrete benefits of the program are reflected in the Contractor's minority and female workforce participation;
 - (4) Makes a good-faith effort to meet its individual goals and timetables; and
 - (5) Can provide access to documentation that demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply is the Contractor's, and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.
- (i) A single goal for minorities and a separate single goal for women shall be established. The Contractor is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and nonminority. Consequently, the Contractor may be in violation of Executive Order 11246, as amended, if a particular group is employed in a substantially disparate manner.
 - (j) The Contractor shall not use goals or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.
 - (k) The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts under Executive Order 11246, as amended.
 - (l) The Contractor shall carry out such sanctions and penalties for violation of this clause and of the Equal Opportunity clause, including suspension, termination, and cancellation of existing subcontracts, as may be imposed or ordered under Executive Order 11246, as amended, and its implementing regulations, by the OFCCP. Any failure to carry out these sanctions and penalties as ordered shall be a violation of this clause and Executive Order 11246, as amended.
 - (m) The Contractor in fulfilling its obligations under this clause shall implement affirmative action procedures at least as extensive as those prescribed in paragraph (g) of this clause, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of Executive Order 11246, as amended, the implementing regulations, or this clause, the Deputy Assistant Secretary shall take action as prescribed in 41 CFR 60-4.8.
 - (n) The Contractor shall designate a responsible official to--
 - (1) Monitor all employment-related activity to ensure that the Contractor's equal employment policy is being carried out;
 - (2) Submit reports as may be required by the Government; and
 - (3) Keep records that shall at least include for each employee the name, address, telephone number, construction trade, union affiliation (if any), employee identification number, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, separate records are not required to be maintained.

Nothing contained herein shall be construed as a limitation upon the application of other laws that establish different

standards of compliance or upon the requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

(End of clause)

52.222-35 EQUAL OPPORTUNITY FOR SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS (DEC 2001)

(a) Definitions. As used in this clause--

All employment openings means all positions except executive and top management, those positions that will be filled from within the Contractor's organization, and positions lasting 3 days or less. This term includes full-time employment, temporary employment of more than 3 days duration, and part-time employment.

Executive and top management means any employee--

(1) Whose primary duty consists of the management of the enterprise in which the individual is employed or of a customarily recognized department or subdivision thereof;

(2) Who customarily and regularly directs the work of two or more other employees;

(3) Who has the authority to hire or fire other employees or whose suggestions and recommendations as to the hiring or firing and as to the advancement and promotion or any other change of status of other employees will be given particular weight;

(4) Who customarily and regularly exercises discretionary powers; and

(5) Who does not devote more than 20 percent or, in the case of an employee of a retail or service establishment, who does not devote more than 40 percent of total hours of work in the work week to activities that are not directly and closely related to the performance of the work described in paragraphs (1) through (4) of this definition. This paragraph (5) does not apply in the case of an employee who is in sole charge of an establishment or a physically separated branch establishment, or who owns at least a 20 percent interest in the enterprise in which the individual is employed.

Other eligible veteran means any other veteran who served on active duty during a war or in a campaign or expedition for which a campaign badge has been authorized.

Positions that will be filled from within the Contractor's organization means employment openings for which the Contractor will give no consideration to persons outside the Contractor's organization (including any affiliates, subsidiaries, and parent companies) and includes any openings the Contractor proposes to fill from regularly established "recall" lists. The exception does not apply to a particular opening once an employer decides to consider applicants outside of its organization.

Qualified special disabled veteran means a special disabled veteran who satisfies the requisite skill, experience, education, and other job-related requirements of the employment position such veteran holds or desires, and who, with or without reasonable accommodation, can perform the essential functions of such position.

Special disabled veteran means--

(1) A veteran who is entitled to compensation (or who but for the receipt of military retired pay would be entitled to compensation) under laws administered by the Department of Veterans Affairs for a disability--

(i) Rated at 30 percent or more; or

(ii) Rated at 10 or 20 percent in the case of a veteran who has been determined under 38 U.S.C. 3106 to have a serious employment handicap (i.e., a significant impairment of the veteran's ability to prepare for, obtain, or retain employment consistent with the veteran's abilities, aptitudes, and interests); or

(2) A person who was discharged or released from active duty because of a service-connected disability.

Veteran of the Vietnam era means a person who--

(1) Served on active duty for a period of more than 180 days and was discharged or released from active duty with other than a dishonorable discharge, if any part of such active duty occurred--

(i) In the Republic of Vietnam between February 28, 1961, and May 7, 1975; or

(ii) Between August 5, 1964, and May 7, 1975, in all other cases; or

(2) Was discharged or released from active duty for a service-connected disability if any part of the active duty was performed--

(i) In the Republic of Vietnam between February 28, 1961, and May 7, 1975; or

(ii) Between August 5, 1964, and May 7, 1975, in all other cases.

(b) General. (1) The Contractor shall not discriminate against the individual because the individual is a special disabled veteran, a veteran of the Vietnam era, or other eligible veteran, regarding any position for which the employee or applicant for employment is qualified. The Contractor shall take affirmative action to employ, advance in employment, and otherwise treat qualified special disabled veterans, veterans of the Vietnam era, and other eligible veterans without discrimination based upon their disability or veterans' status in all employment practices such as--

(i) Recruitment, advertising, and job application procedures;

(ii) Hiring, upgrading, promotion, award of tenure, demotion, transfer, layoff, termination, right of return from layoff and rehiring;

(iii) Rate of pay or any other form of compensation and changes in compensation;

(iv) Job assignments, job classifications, organizational structures, position descriptions, lines of progression, and seniority lists;

(v) Leaves of absence, sick leave, or any other leave;

(vi) Fringe benefits available by virtue of employment, whether or not administered by the Contractor;

(vii) Selection and financial support for training, including apprenticeship, and on-the-job training under 38 U.S.C. 3687, professional meetings, conferences, and other related activities, and selection for leaves of absence to pursue training;

(viii) Activities sponsored by the Contractor including social or recreational programs; and

(ix) Any other term, condition, or privilege of employment.

(2) The Contractor shall comply with the rules, regulations, and relevant orders of the Secretary of Labor issued under the Vietnam Era Veterans' Readjustment Assistance Act of 1972 (the Act), as amended (38 U.S.C. 4211 and 4212).

(c) Listing openings. (1) The Contractor shall immediately list all employment openings that exist at the time of the execution of this contract and those which occur during the performance of this contract, including those not generated by this contract, and including those occurring at an establishment of the Contractor other than the one where the contract is being performed, but excluding those of independently operated corporate affiliates, at an appropriate local public employment service office of the State wherein the opening occurs. Listing employment openings with the U.S. Department of Labor's America's Job Bank shall satisfy the requirement to list jobs with the local employment service office.

(2) The Contractor shall make the listing of employment openings with the local employment service office at least concurrently with using any other recruitment source or effort and shall involve the normal obligations of placing a bona fide job order, including accepting referrals of veterans and nonveterans. This listing of employment openings does not require hiring any particular job applicant or hiring from any particular group of job applicants and is not intended to relieve the Contractor from any requirements of Executive orders or regulations concerning nondiscrimination in employment.

(3) Whenever the Contractor becomes contractually bound to the listing terms of this clause, it shall advise the State public employment agency in each State where it has establishments of the name and location of each hiring location in the State. As long as the Contractor is contractually bound to these terms and has so advised the State agency, it need not advise the State agency of subsequent contracts. The Contractor may advise the State agency when it is no longer bound by this contract clause.

(d) Applicability. This clause does not apply to the listing of employment openings that occur and are filled outside the 50 States, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, American Samoa, Guam, the Virgin Islands of the United States, and Wake Island.

(e) Postings. (1) The Contractor shall post employment notices in conspicuous places that are available to employees and applicants for employment.

(2) The employment notices shall--

(i) State the rights of applicants and employees as well as the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified employees and applicants who are special disabled veterans, veterans of the Vietnam era, and other eligible veterans; and

(ii) Be in a form prescribed by the Deputy Assistant Secretary for Federal Contract Compliance Programs, Department of Labor (Deputy Assistant Secretary of Labor), and provided by or through the Contracting Officer.

(3) The Contractor shall ensure that applicants or employees who are special disabled veterans are informed of the contents of the notice (e.g., the Contractor may have the notice read to a visually disabled veteran, or may lower the posted notice so that it can be read by a person in a wheelchair).

(4) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement, or other contract understanding, that the Contractor is bound by the terms of the Act and is committed to take affirmative action to employ, and advance in employment, qualified special disabled veterans, veterans of the Vietnam era, and other eligible veterans.

(f) Noncompliance. If the Contractor does not comply with the requirements of this clause, the Government may take appropriate actions under the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.

(g) Subcontracts. The Contractor shall insert the terms of this clause in all subcontracts or purchase orders of \$25,000 or more unless exempted by rules, regulations, or orders of the Secretary of Labor. The Contractor shall act as specified by the Deputy Assistant Secretary of Labor to enforce the terms, including action for noncompliance.

(End of clause)

52.222-36 AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES (JUN 1998)

(a) General. (1) Regarding any position for which the employee or applicant for employment is qualified, the Contractor shall not discriminate against any employee or applicant because of physical or mental disability. The Contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified individuals with disabilities without discrimination based upon their physical or mental disability in all employment practices such as--

(i) Recruitment, advertising, and job application procedures;

(ii) Hiring, upgrading, promotion, award of tenure, demotion, transfer, layoff, termination, right of return from layoff, and rehiring;

(iii) Rates of pay or any other form of compensation and changes in compensation;

(iv) Job assignments, job classifications, organizational structures, position descriptions, lines of progression, and seniority lists;

(v) Leaves of absence, sick leave, or any other leave;

(vi) Fringe benefits available by virtue of employment, whether or not administered by the Contractor;

(vii) Selection and financial support for training, including apprenticeships, professional meetings, conferences, and other related activities, and selection for leaves of absence to pursue training;

(viii) Activities sponsored by the Contractor, including social or recreational programs; and

(ix) Any other term, condition, or privilege of employment.

(2) The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor (Secretary) issued under the Rehabilitation Act of 1973 (29 U.S.C. 793) (the Act), as amended.

(b) Postings. (1) The Contractor agrees to post employment notices stating--

(i) The Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified individuals with disabilities; and

(ii) The rights of applicants and employees.

(2) These notices shall be posted in conspicuous places that are available to employees and applicants for employment. The Contractor shall ensure that applicants and employees with disabilities are informed of the contents of the notice (e.g., the Contractor may have the notice read to a visually disabled individual, or may lower the posted notice so that it might be read by a person in a wheelchair). The notices shall be in a form prescribed by the Deputy Assistant Secretary for Federal Contract Compliance of the U.S. Department of Labor (Deputy Assistant Secretary) and shall be provided by or through the Contracting Officer.

(3) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of Section 503 of the Act and is committed to take affirmative action to employ, and advance in employment, qualified individuals with physical or mental disabilities.

(c) Noncompliance. If the Contractor does not comply with the requirements of this clause, appropriate actions may be taken under the rules, regulations, and relevant orders of the Secretary issued pursuant to the Act.

(d) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order in excess of \$10,000 unless exempted by rules, regulations, or orders of the Secretary. The Contractor shall act as specified by the Deputy Assistant Secretary to enforce the terms, including action for noncompliance.

(End of clause)

52.222-37 EMPLOYMENT REPORTS ON SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS (DEC 2001)

(a) Unless the Contractor is a State or local government agency, the Contractor shall report at least annually, as required by the Secretary of Labor, on--

(1) The number of disabled veterans and the number of veterans of the Vietnam era in the workforce of the contractor by job category and hiring location; and

(2) The total number of new employees hired during the period covered by the report, and of that total, the number of disabled veterans, and the number of veterans of the Vietnam era.

(b) The above items shall be reported by completing the form entitled "Federal Contractor Veterans' Employment Report VETS-100."

(c) Reports shall be submitted no later than September 30 of each year beginning September 30, 1988.

(d) The employment activity report required by paragraph (a)(2) of this clause shall reflect total hires during the most recent 12-month period as of the ending date selected for the employment profile report required by paragraph (a)(1) of this clause. Contractors may select an ending date: (1) As of the end of any pay period during the period January through March 1st of the year the report is due, or (2) as of December 31, if the contractor has previous written approval from the Equal Employment Opportunity Commission to do so for purposes of submitting the Employer Information Report EEO-1 (Standard Form 100).

(e) The count of veterans reported according to paragraph (a) of this clause shall be based on voluntary disclosure. Each Contractor subject to the reporting requirements at 38 U.S.C. 4212 shall invite all disabled veterans and veterans of the Vietnam era who wish to benefit under the affirmative action program at 38 U.S.C. 4212 to identify themselves to the Contractor. The invitation shall state that the information is voluntarily provided; that the information will be kept confidential; that disclosure or refusal to provide the information will not subject the applicant or employee to any adverse treatment; and that the information will be used only in accordance with the regulations promulgated under 38 U.S.C. 4212.

(f) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order of \$10,000 or more unless exempted by rules, regulations, or orders of the Secretary.

(End of clause)

52.223-4 RECOVERED MATERIAL CERTIFICATION (OCT 1997)

As required by the Resource Conservation and Recovery Act of 1976 (42 U.S.C. 6962(c)(3)(A)(i)), the offeror certifies, by signing this offer, that the percentage of recovered materials to be used in the performance of the contract will be at least the amount required by the applicable contract specifications.

(End of provision)

52.223-6 DRUG-FREE WORKPLACE (MAY 2001)

(a) Definitions. As used in this clause --

"Controlled substance" means a controlled substance in schedules I through V of section 202 of the Controlled Substances Act (21 U.S.C. 812) and as further defined in regulation at 21 CFR 1308.11 - 1308.15.

"Conviction" means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the Federal or State criminal drug statutes.

"Criminal drug statute" means a Federal or non-Federal criminal statute involving the manufacture, distribution, dispensing, possession, or use of any controlled substance.

"Drug-free workplace" means the site(s) for the performance of work done by the Contractor in connection with a specific contract at which employees of the Contractor are prohibited from engaging in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance.

"Employee" means an employee of a Contractor directly engaged in the performance of work under a Government contract. "Directly engaged" is defined to include all direct cost employees and any other Contractor employee who has other than a minimal impact or involvement in contract performance.

"Individual" means an offeror/contractor that has no more than one employee including the offeror/contractor.

(b) The Contractor, if other than an individual, shall-- within 30 days after award (unless a longer period is agreed to in writing for contracts of 30 days or more performance duration), or as soon as possible for contracts of less than 30 days performance duration--

(1) Publish a statement notifying its employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition;

(2) Establish an ongoing drug-free awareness program to inform such employees about--

(i) The dangers of drug abuse in the workplace;

(ii) The Contractor's policy of maintaining a drug-free workplace;

(iii) Any available drug counseling, rehabilitation, and employee assistance programs; and

(iv) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(3) Provide all employees engaged in performance of the contract with a copy of the statement required by subparagraph (b)(1) of this clause;

(4) Notify such employees in writing in the statement required by subparagraph (b)(1) of this clause that, as a condition of continued employment on this contract, the employee will--

(i) Abide by the terms of the statement; and

(ii) Notify the employer in writing of the employee's conviction under a criminal drug statute for a violation occurring in the workplace no later than 5 days after such conviction.

(5) Notify the Contracting Officer in writing within 10 days after receiving notice under subdivision (b)(4)(ii) of this clause, from an employee or otherwise receiving actual notice of such conviction. The notice shall include the position title of the employee;

(6) Within 30 days after receiving notice under subdivision (b)(4)(ii) of this clause of a conviction, take one of the following actions with respect to any employee who is convicted of a drug abuse violation occurring in the workplace:

(i) Taking appropriate personnel action against such employee, up to and including termination; or

(ii) Require such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency; and

(7) Make a good faith effort to maintain a drug-free workplace through implementation of subparagraphs (b)(1) through (b)(6) of this clause.

(c) The Contractor, if an individual, agrees by award of the contract or acceptance of a purchase order, not to engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance while performing this contract.

(d) In addition to other remedies available to the Government, the Contractor's failure to comply with the requirements of paragraph (b) or (c) of this clause may, pursuant to FAR 23.506, render the Contractor subject to suspension of contract payments, termination of the contract for default, and suspension or debarment.

(End of clause)

52.223-9 ESTIMATE OF PERCENTAGE OF RECOVERED MATERIAL CONTENT FOR EPA-DESIGNATED PRODUCTS (AUG 2000)

(a) Definitions. As used in this clause--

Postconsumer material means a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. Postconsumer material is a part of the broader category of "recovered material."

Recovered material means waste materials and by-products recovered or diverted from solid waste, but the term does not include those materials and by-products generated from, and commonly reused within, an original manufacturing process.

(b) The Contractor, on completion of this contract, shall--

(1) Estimate the percentage of the total recovered material used in contract performance, including, if applicable, the percentage of postconsumer material content; and

(2) Submit this estimate to **U.S. Army Corps of Engineers, St. Louis District Contracting Officer** complete in accordance with agency procedures].

(End of clause)

52.223-14 TOXIC CHEMICAL RELEASE REPORTING (OCT 2000)

(a) Unless otherwise exempt, the Contractor, as owner or operator of a facility used in the performance of this contract, shall file by July 1 for the prior calendar year an annual Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023(a) and (g)), and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106). The Contractor shall file, for each facility subject to the Form R filing and reporting requirements, the annual Form R throughout the life of the contract.

(b) A Contractor owned or operated facility used in the performance of this contract is exempt from the requirement to file an annual Form R if--

(1) The facility does not manufacture, process, or otherwise use any toxic chemicals listed under section 313(c) of EPCRA, 42 U.S.C. 11023(c);

(2) The facility does not have 10 or more full-time employees as specified in section 313(b)(1)(A) of EPCRA, 42 U.S.C. 11023(b)(1)(A);

(3) The facility does not meet the reporting thresholds of toxic chemicals established under of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

(4) The facility does not fall within Standard Industrial Classification Code (SIC) major groups 20 through 39 or their corresponding North American Industry Classification System (NAICS) sectors 31 through 33; or

(5) The facility is not located within any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, or any other territory or possession over which the United States has jurisdiction.

(c) If the Contractor has certified to an exemption in accordance with one or more of the criteria in paragraph (b) of this clause, and after award of the contract circumstances change so that any of its owned or operated facilities used in the performance of this contract is no longer exempt--

(1) The Contractor shall notify the Contracting Officer; and

(2) The Contractor, as owner or operator of a facility used in the performance of this contract that is no longer exempt, shall (i) submit a Toxic Chemical Release Inventory Form (Form R) on or before July 1 for the prior calendar year during which the facility becomes eligible; and (ii) continue to file the annual Form R for the life of the contract for such facility.

(d) The Contracting Officer may terminate this contract or take other action as appropriate, if the Contractor fails to comply accurately and fully with the EPCRA and PPA toxic chemical release filing and reporting requirements.

(e) Except for acquisitions of commercial items, as defined in FAR Part 2, the Contractor shall--

(1) For competitive subcontracts expected to exceed \$100,000 (including all options), include a solicitation provision substantially the same as the provision at FAR 52.223-13, Certification of Toxic Chemical Release Reporting; and

(2) Include in any resultant subcontract exceeding \$100,000 (including all options), the substance of this clause, except this paragraph (e).

(End of clause)

52.225-9 BUY AMERICAN ACT—CONSTRUCTION MATERIALS (MAY 2002)

(a) Definitions. As used in this clause--

Component means an article, material, or supply incorporated directly into a construction material.

Construction material means an article, material, or supply brought to the construction site by the Contractor or a subcontractor for incorporation into the building or work. The term also includes an item brought to the site preassembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those systems are delivered to the construction site. Materials purchased directly by the Government are supplies, not construction material.

Cost of components means--

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the construction material (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the end product.

Domestic construction material means--

(1) An unmanufactured construction material mined or produced in the United States; or

(2) A construction material manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind for which nonavailability determinations have been made are treated as domestic.

Foreign construction material means a construction material other than a domestic construction material.

United States means the 50 States and the District of Columbia, U.S. territories and possessions, Puerto Rico, the Northern Mariana Islands, and any other place subject to U.S. jurisdiction, but does not include leased bases.

(b) Domestic preference. (1) This clause implements the Buy American Act (41 U.S.C. 10a-10d) by providing a preference for domestic construction material. The Contractor shall use only domestic construction material in performing this contract, except as provided in paragraphs (b)(2) and (b)(3) of this clause.

(2) This requirement does not apply to the construction material or components listed by the Government as follows **“none”**.

(3) The Contracting Officer may add other foreign construction material to the list in paragraph (b)(2) of this clause if the Government determines that

(i) The cost of domestic construction material would be unreasonable. The cost of a particular domestic construction material subject to the requirements of the Buy American Act is unreasonable when the cost of such material exceeds the cost of foreign material by more than 6 percent;

(ii) The application of the restriction of the Buy American Act to a particular construction material would be impracticable or inconsistent with the public interest; or

(iii) The construction material is not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality.

(c) Request for determination of inapplicability of the Buy American Act. (1)(i) Any Contractor request to use foreign construction material in accordance with paragraph (b)(3) of this clause shall include adequate information for Government evaluation of the request, including--

(A) A description of the foreign and domestic construction materials;

(B) Unit of measure;

(C) Quantity;

(D) Price;

(E) Time of delivery or availability;

(F) Location of the construction project;

(G) Name and address of the proposed supplier; and

(H) A detailed justification of the reason for use of foreign construction materials cited in accordance with paragraph (b)(3) of this clause.

(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed price comparison table in the format in paragraph (d) of this clause.

(iii) The price of construction material shall include all delivery costs to the construction site and any applicable duty (whether or not a duty-free certificate may be issued).

(iv) Any Contractor request for a determination submitted after contract award shall explain why the Contractor could not reasonably foresee the need for such determination and could not have requested the determination before contract award. If the Contractor does not submit a satisfactory explanation, the Contracting Officer need not make a determination.

(2) If the Government determines after contract award that an exception to the Buy American Act applies and the Contracting Officer and the Contractor negotiate adequate consideration, the Contracting Officer will modify the contract to allow use of the foreign construction material. However, when the basis for the exception is the unreasonable price of a domestic construction material, adequate consideration is not less than the differential established in paragraph (b)(3)(i) of this clause.

(3) Unless the Government determines that an exception to the Buy American Act applies, use of foreign construction material is noncompliant with the Buy American Act.

(d) Data. To permit evaluation of requests under paragraph (c) of this clause based on unreasonable cost, the Contractor shall include the following information and any applicable supporting data based on the survey of suppliers:

Foreign and Domestic Construction Materials Price Comparison

Construction material description	Unit of measure	Quantity	Price (dollars) \1\
<hr/>			
Item 1			
Foreign construction material....
Domestic construction material...
Item 2			
Foreign construction material....
Domestic construction material...
<hr/>			

Include all delivery costs to the construction site and any applicable duty (whether or not a duty-free entry certificate is issued).

List name, address, telephone number, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.

Include other applicable supporting information.

(End of clause)

52.225-13 RESTRICTIONS ON CERTAIN FOREIGN PURCHASES (JUL 2000)

(a) The Contractor shall not acquire, for use in the performance of this contract, any supplies or services originating from sources within, or that were located in or transported from or through, countries whose products are banned from importation into the United States under regulations of the Office of Foreign Assets Control, Department of the Treasury. Those countries are Cuba, Iran, Iraq, Libya, North Korea, Sudan, the territory of Afghanistan controlled by the Taliban, and Serbia (excluding the territory of Kosovo).

(b) The Contractor shall not acquire for use in the performance of this contract any supplies or services from entities controlled by the government of Iraq.

(c) The Contractor shall insert this clause, including this paragraph (c), in all subcontracts.

(End of clause)

52.226-1 UTILIZATION OF INDIAN ORGANIZATIONS AND INDIAN-OWNED ECONOMIC ENTERPRISES (JUN 2000)

(a) Definitions. As used in this clause:

"Indian" means any person who is a member of any Indian tribe, band, group, pueblo or community that is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs (BIA) in accordance with 25 U.S.C. 1452(c) and any "Native" as defined in the Alaska Native Claims Settlement Act (43 U.S.C. 1601).

"Indian organization" means the governing body of any Indian tribe or entity established or recognized by the governing body of an Indian tribe for the purposes of 25 U.S.C., chapter 17.

"Indian-owned economic enterprise" means any Indian-owned (as determined by the Secretary of the Interior) commercial, industrial, or business activity established or organized for the purpose of profit, provided that Indian ownership constitute a not less than 51 percent of the enterprise.

"Indian tribe" means any Indian tribe, band, group, pueblo or community, including native villages and native groups (including corporations organized by Kenai, Juneau, Sitka, and Kodiak) as defined in the Alaska Native Claims Settlement Act, that is recognized by the Federal Government as eligible for services from BIA in accordance with 25 U.S.C. 1542(c).

"Interested party" means a prime contractor or an actual or prospective offeror whose direct economic interest would be affected by the award of a subcontract or by the failure to award a subcontract.

(b) The Contractor shall use its best efforts to give Indian organizations and Indian-owned economic enterprises (25 U.S.C. 1544) the maximum practicable opportunity to participate in the subcontracts it awards to the fullest extent consistent with efficient performance of its contract.

(1) The Contracting Officer and the Contractor, acting in good faith, may rely on the representation of an Indian organization or Indian-owned economic enterprise as to its eligibility, unless an interested party challenges its status or the Contracting Officer has independent reason to question that status. In the event of a challenge to the representation of a subcontractor, the Contracting Officer will refer the matter to the U.S. Department of the Interior, Bureau of Indian Affairs (BIA), Attn: Chief, Division of Contracting and Grants Administration, 1849 C Street, NW., MS 2626-MIB, Washington, DC 20240-4000.

The BIA will determine the eligibility and notify the Contracting Officer. No incentive payment will be made within 50 working days of subcontract award or while a challenge is pending. If a subcontractor is determined to be an ineligible participant, no incentive payment will be made under the Indian Incentive Program.

(2) The Contractor may request an adjustment under the Indian Incentive Program to the following:

- (i) The estimated cost of a cost-type contract.
- (ii) The target cost of a cost-plus-incentive-fee prime contract.
- (iii) The target cost and ceiling price of a fixed-price incentive prime contract.
- (iv) The price of a firm-fixed-price prime contract.

(3) The amount of the adjustment to the prime contract is 5 percent of the estimated cost, target cost, or firm-fixed-price included in the subcontract initially awarded to the Indian organization or Indian-owned economic enterprise.

(4) The Contractor has the burden of proving the amount claimed and must assert its request for an adjustment prior to completion of contract performance.

(c) The Contracting Officer, subject to the terms and conditions of the contract and the availability of funds, will authorize an incentive payment of 5 percent of the amount paid to the subcontractor. The Contracting Officer will seek funding in accordance with agency procedures.

(End of clause)

52.227-1 AUTHORIZATION AND CONSENT (JUL 1995)

(a) The Government authorizes and consents to all use and manufacture, in performing this contract or any subcontract at any tier, of any invention described in and covered by a United States patent (1) embodied in the

structure or composition of any article the delivery of which is accepted by the Government under this contract or (2) used in machinery, tools, or methods whose use necessarily results from compliance by the Contractor or a subcontractor with (i) specifications or written provisions forming a part of this contract or (ii) specific written instructions given by the Contracting Officer directing the manner of performance. The entire liability to the Government for infringement of a patent of the United States shall be determined solely by the provisions of the indemnity clause, if any, included in this contract or any subcontract hereunder (including any lower-tier subcontract), and the Government assumes liability for all other infringement to the extent of the authorization and consent hereinabove granted.

(b) The Contractor agrees to include, and require inclusion of, this clause, suitably modified to identify the parties, in all subcontracts at any tier for supplies or services (including construction, architect-engineer services, and materials, supplies, models, samples, and design or testing services expected to exceed the simplified acquisition threshold (however, omission of this clause from any subcontract, including those at or below the simplified acquisition threshold, does not affect this authorization and consent.)

(End of clause)

52.227-2 NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT (AUG 1996)

(a) The Contractor shall report to the Contracting Officer, promptly and in reasonable written detail, each notice or claim of patent or copyright infringement based on the performance of this contract of which the Contractor has knowledge.

(b) In the event of any claim or suit against the Government on account of any alleged patent or copyright infringement arising out of the performance of this contract or out of the use of any supplies furnished or work or services performed under this contract, the Contractor shall furnish to the Government, when requested by the Contracting Officer, all evidence and information in possession of the Contractor pertaining to such suit or claim. Such evidence and information shall be furnished at the expense of the Government except where the Contractor has agreed to indemnify the Government.

(e) The Contractor agrees to include, and require inclusion of, this clause in all subcontracts at any tier for supplies or services (including construction and architect-engineer subcontracts and those for material, supplies, models, samples, or design or testing services) expected to exceed the simplified acquisition threshold at (FAR) 2.101 to exceed the dollar amount set forth in 13.000 of the Federal Acquisition Regulation (FAR).

(End of clause)

52.229-3 FEDERAL, STATE, AND LOCAL TAXES (APR 2003)

(a) As used in this clause--

"Contract date" means the date set for bid opening or, if this is a negotiated contract or a modification, the effective date of this contract or modification.

"All applicable Federal, State, and local taxes and duties" means all taxes and duties, in effect on the contract date, that the taxing authority is imposing and collecting on the transactions or property covered by this contract.

"After-imposed Federal tax" means any new or increased Federal excise tax or duty, or tax that was exempted or excluded on the contract date but whose exemption was later revoked or reduced during the contract period, on the transactions or property covered by this contract that the Contractor is required to pay or bear as the result of legislative, judicial, or administrative action taking effect after the contract date. It does not include social security tax or other employment taxes.

"After-relieved Federal tax" means any amount of Federal excise tax or duty, except social security or other employment taxes, that would otherwise have been payable on the transactions or property covered by this contract, but which the Contractor is not required to pay or bear, or for which the Contractor obtains a refund or drawback, as the result of legislative, judicial, or administrative action taking effect after the contract date.

Local taxes includes taxes imposed by a possession or territory of the United States, Puerto Rico, or the Northern Mariana Islands, if the contract is performed wholly or partly in any of those areas.

(b) The contract price includes all applicable Federal, State, and local taxes and duties.

(c) The contract price shall be increased by the amount of any after-imposed Federal tax, provided the Contractor warrants in writing that no amount for such newly imposed Federal excise tax or duty or rate increase was included in the contract price, as a contingency reserve or otherwise.

(d) The contract price shall be decreased by the amount of any after-relieved Federal tax.

(e) The contract price shall be decreased by the amount of any Federal excise tax or duty, except social security or other employment taxes, that the Contractor is required to pay or bear, or does not obtain a refund of, through the Contractor's fault, negligence, or failure to follow instructions of the Contracting Officer.

(f) No adjustment shall be made in the contract price under this clause unless the amount of the adjustment exceeds \$250.

(g) The Contractor shall promptly notify the Contracting Officer of all matters relating to any Federal excise tax or duty that reasonably may be expected to result in either an increase or decrease in the contract price and shall take appropriate action as the Contracting Officer directs.

(h) The Government shall, without liability, furnish evidence appropriate to establish exemption from any Federal, State, or local tax when the Contractor requests such evidence and a reasonable basis exists to sustain the exemption.

(End of clause)

52.231-5000 EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE MAR 1995)--EFARS

(a) This clause does not apply to terminations. See 52.249-5000, Basis for Settlement of Proposals and FAR Part 49.

(b) Allowable cost for construction and marine plant and equipment in sound workable condition owned or controlled and furnished by a contractor or subcontractor at any tier shall be based on actual cost data for each piece of equipment or groups of similar serial and series for which the Government can determine both ownership and operating costs from the contractor's accounting records. When both ownership and operating costs cannot be determined for any piece of equipment or groups of similar serial or series equipment from the contractor's accounting records, costs for that equipment shall be based upon the applicable provisions of EP 1110-1-8, Construction Equipment Ownership and Operating Expense Schedule, **Region V**. Working conditions shall be considered to be average for determining equipment rates using the schedule unless specified otherwise by the contracting officer. For equipment not included in the schedule, rates for comparable pieces of equipment may be used or a rate may be developed using the formula provided in the schedule. For forward pricing, the schedule in effect at the time of negotiations shall apply. For retroactive pricing, the schedule in effect at the time the work was performed shall apply.

(c) Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d)(ii) and FAR 31.205-36. Rates for equipment rented from an organization under common control, lease-purchase arrangements, and sale-leaseback

arrangements, will be determined using the schedule, except that actual rates will be used for equipment leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated lessees.

(d) When actual equipment costs are proposed and the total amount of the pricing action exceeds the small purchase threshold, the contracting officer shall request the contractor to submit either certified cost or pricing data, or partial/limited data, as appropriate. The data shall be submitted on Standard Form 1411, Contract Pricing Proposal Cover Sheet.

(End of clause)

52.232-5 PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS (SEP 2002)

(a) Payment of price. The Government shall pay the Contractor the contract price as provided in this contract.

(b) Progress payments. The Government shall make progress payments monthly as the work proceeds, or at more frequent intervals as determined by the Contracting Officer, on estimates of work accomplished which meets the standards of quality established under the contract, as approved by the Contracting Officer.

(1) The Contractor's request for progress payments shall include the following substantiation:

(i) An itemization of the amounts requested, related to the various elements of work required by the contract covered by the payment requested.

(ii) A listing of the amount included for work performed by each subcontractor under the contract.

(iii) A listing of the total amount of each subcontract under the contract.

(iv) A listing of the amounts previously paid to each such subcontractor under the contract.

(v) Additional supporting data in a form and detail required by the Contracting Officer.

(2) In the preparation of estimates, the Contracting Officer may authorize material delivered on the site and preparatory work done to be taken into consideration. Material delivered to the Contractor at locations other than the site also may be taken into consideration if--

(i) Consideration is specifically authorized by this contract; and

(ii) The Contractor furnishes satisfactory evidence that it has acquired title to such material and that the material will be used to perform this contract.

(c) Contractor certification. Along with each request for progress payments, the Contractor shall furnish the following certification, or payment shall not be made: (However, if the Contractor elects to delete paragraph (c)(4) from the certification, the certification is still acceptable.)

I hereby certify, to the best of my knowledge and belief, that--

(1) The amounts requested are only for performance in accordance with the specifications, terms, and conditions of the contract;

(2) All payments due to subcontractors and suppliers from previous payments received under the contract have been made, and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract agreements and the requirements of chapter 39 of Title 31, United States Code;

(3) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract; and

(4) This certification is not to be construed as final acceptance of a subcontractor's performance.

(Name)

(Title)

(Date)

(d) Refund of unearned amounts. If the Contractor, after making a certified request for progress payments, discovers that a portion or all of such request constitutes a payment for performance by the Contractor that fails to conform to the specifications, terms, and conditions of this contract (hereinafter referred to as the "unearned amount"), the Contractor shall--

(1) Notify the Contracting Officer of such performance deficiency; and

(2) Be obligated to pay the Government an amount (computed by the Contracting Officer in the manner provided in paragraph (j) of this clause) equal to interest on the unearned amount from the 8th day after the date of receipt of the unearned amount until--

(i) The date the Contractor notifies the Contracting Officer that the performance deficiency has been corrected; or

(ii) The date the Contractor reduces the amount of any subsequent certified request for progress payments by an amount equal to the unearned amount.

(e) Retainage. If the Contracting Officer finds that satisfactory progress was achieved during any period for which a progress payment is to be made, the Contracting Officer shall authorize payment to be made in full. However, if satisfactory progress has not been made, the Contracting Officer may retain a maximum of 10 percent of the amount of the payment until satisfactory progress is achieved. When the work is substantially complete, the Contracting Officer may retain from previously withheld funds and future progress payments that amount the Contracting Officer considers adequate for protection of the Government and shall release to the Contractor all the remaining withheld funds. Also, on completion and acceptance of each separate building, public work, or other division of the contract, for which the price is stated separately in the contract, payment shall be made for the completed work without retention of a percentage.

(f) Title, liability, and reservation of rights. All material and work covered by progress payments made shall, at the time of payment, become the sole property of the Government, but this shall not be construed as--

(1) Relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work; or

(2) Waiving the right of the Government to require the fulfillment of all of the terms of the contract.

(g) Reimbursement for bond premiums. In making these progress payments, the Government shall, upon request,

reimburse the Contractor for the amount of premiums paid for performance and payment bonds (including coinsurance and reinsurance agreements, when applicable) after the Contractor has furnished evidence of full payment to the surety. The retainage provisions in paragraph (e) of this clause shall not apply to that portion of progress payments attributable to bond premiums.

(h) Final payment. The Government shall pay the amount due the Contractor under this contract after--

(1) Completion and acceptance of all work;

(2) Presentation of a properly executed voucher; and

(3) Presentation of release of all claims against

the Government arising by virtue of this contract, other than claims, in stated amounts, that the Contractor has specifically excepted from the operation of the release. A release may also be required of the assignee if the Contractor's claim to amounts payable under this contract has been assigned under the Assignment of Claims Act of 1940 (31 U.S.C. 3727 and 41 U.S.C. 15).

(i) Limitation because of undefinitized work. Notwithstanding any provision of this contract, progress payments shall not exceed 80 percent on work accomplished on undefinitized contract actions. A "contract action" is any action resulting in a contract, as defined in FAR Subpart 2.1, including contract modifications for additional supplies or services, but not including contract modifications that are within the scope and under the terms of the contract, such as contract modifications issued pursuant to the Changes clause, or funding and other administrative changes.

(j) Interest computation on unearned amounts. In accordance with 31 U.S.C. 3903(c)(1), the amount payable under subparagraph (d)(2) of this clause shall be--

(1) Computed at the rate of average bond equivalent rates of 91-day Treasury bills auctioned at the most recent auction of such bills prior to the date the Contractor receives the unearned amount; and

(2) Deducted from the next available payment to the Contractor.

(End of clause)

52.232-23 ASSIGNMENT OF CLAIMS (JAN 1986) - ALTERNATE I (APR 1984)

(a) The Contractor, under the Assignment of Claims Act, as amended, 31 U.S.C. 3727, 41 U.S.C. 15 (hereafter referred to as "the Act"), may assign its rights to be paid amounts due or to become due as a result of the performance of this contract to a bank, trust company, or other financing institution, including any Federal lending agency. The assignee under such an assignment may thereafter further assign or reassign its right under the original assignment to any type of financing institution described in the preceding sentence. Unless otherwise stated in this contract, payments to an assignee of any amounts due or to become due under this contract shall not, to the extent specified in the Act, be subject to reduction or setoff.

(b) Any assignment or reassignment authorized under the Act and this clause shall cover all unpaid amounts payable under this contract, and shall not be made to more than one party, except that an assignment or reassignment may be made to one party as agent or trustee for two or more parties participating in the financing of this contract.

(c) The Contractor shall not furnish or disclose to any assignee under this contract any classified document (including this contract) or information related to work under this contract until the Contracting Officer authorizes such action in writing.

(End of clause)

52.232-27 PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS (FEB 2002)

Notwithstanding any other payment terms in this contract, the Government will make invoice payments under the terms and conditions specified in this clause. The Government considers payment as being made on the day a check is dated or the date of an electronic funds transfer. Definitions of pertinent terms are set forth in sections 2.101, 32.001, and 32.902 of the Federal Acquisition Regulation. All days referred to in this clause are calendar days, unless otherwise specified. (However, see paragraph (a)(3) concerning payments due on Saturdays, Sundays, and legal holidays.)

(a) Invoice payments--(1) Types of invoice payments. For purposes of this clause, there are several types of invoice payments that may occur under this contract, as follows:

(i) Progress payments, if provided for elsewhere in this contract, based on Contracting Officer approval of the estimated amount and value of work or services performed, including payments for reaching milestones in any project.

(A) The due date for making such payments is 14 days after the designated billing office receives a proper payment request. If the designated billing office fails to annotate the payment request with the actual date of receipt at the time of receipt, the payment due date is the 14th day after the date of the Contractor's payment request, provided the designated billing office receives a proper payment request and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(B) The due date for payment of any amounts retained by the Contracting Officer in accordance with the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts, is as specified in the contract or, if not specified, 30 days after approval by the Contracting Officer for release to the Contractor.

(ii) Final payments based on completion and acceptance of all work and presentation of release of all claims against the Government arising by virtue of the contract, and payments for partial deliveries that have been accepted by the Government (e.g., each separate building, public work, or other division of the contract for which the price is stated separately in the contract).

(A) The due date for making such payments is the later of the following two events:

(1) The 30th day after the designated billing office receives a proper invoice from the Contractor.

(2) The 30th day after Government acceptance of the work or services completed by the Contractor. For a final invoice when the payment amount is subject to contract settlement actions (e.g., release of claims), acceptance is deemed to occur on the effective date of the contract settlement.

(B) If the designated billing office fails to annotate the invoice with the date of actual receipt at the time of receipt, the invoice payment due date is the 30th day after the date of the Contractor's invoice, provided the designated billing office receives a proper invoice and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(2) Contractor's invoice. The Contractor shall prepare and submit invoices to the designated billing office specified in the contract. A proper invoice must include the items listed in paragraphs (a)(2)(i) through (a)(2)(xi) of this clause. If the invoice does not comply with these requirements, the designated billing office must return it within 7 days after receipt, with the reasons why it is not a proper invoice. When computing any interest penalty owed the Contractor, the Government will take into account if the Government notifies the Contractor of an improper invoice in an untimely manner.

(i) Name and address of the Contractor.

(ii) Invoice date and invoice number. (The Contractor should date invoices as close as possible to the date of mailing or transmission.)

(iii) Contract number or other authorization for work or services performed (including order number and contract line item number).

(iv) Description of work or services performed.

(v) Delivery and payment terms (e.g., discount for prompt payment terms).

(vi) Name and address of Contractor official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment).

(vii) Name (where practicable), title, phone number, and mailing address of person to notify in the event of a defective invoice.

(viii) For payments described in paragraph (a)(1)(i) of this clause, substantiation of the amounts requested and certification in accordance with the requirements of the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts.

(ix) Taxpayer Identification Number (TIN). The Contractor shall include its TIN on the invoice only if required elsewhere in this contract.

(x) Electronic funds transfer (EFT) banking information.

(A) The Contractor shall include EFT banking information on the invoice only if required elsewhere in this contract.

(B) If EFT banking information is not required to be on the invoice, in order for the invoice to be a proper invoice, the Contractor shall have submitted correct EFT banking information in accordance with the applicable solicitation provision (e.g., 52.232-38, Submission of Electronic Funds Transfer Information with Offer), contract clause (e.g., 52.232-33, Payment by Electronic Funds Transfer--Central Contractor Registration, or 52.232-34, Payment by Electronic Funds Transfer--Other Than Central Contractor Registration), or applicable agency procedures.

(C) EFT banking information is not required if the Government waived the requirement to pay by EFT.

(xi) Any other information or documentation required by the contract.

(3) Interest penalty. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if payment is not made by the due date and the conditions listed in paragraphs (a)(3)(i) through (a)(3)(iii) of this clause are met, if applicable. However, when the due date falls on a Saturday, Sunday, or legal holiday, the designated payment office may make payment on the following working day without incurring a late payment interest penalty.

(i) The designated billing office received a proper invoice.

(ii) The Government processed a receiving report or other Government documentation authorizing payment and there was no disagreement over quantity, quality, Contractor compliance with any contract term or condition, or requested progress payment amount.

(iii) In the case of a final invoice for any balance of funds due the Contractor for work or services performed, the amount was not subject to further contract settlement actions between the Government and the Contractor.

(4) Computing penalty amount. The Government will compute the interest penalty in accordance with the Office of Management and Budget prompt payment regulations at 5 CFR part 1315.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor for payments described in paragraph (a)(1)(ii) of this clause, Government acceptance or approval is deemed to occur constructively on the 7th day after the Contractor has completed the work or services in accordance with the terms and conditions of the contract. If actual acceptance or approval occurs within the constructive acceptance or approval period, the Government will base the determination of an interest penalty on the actual date of acceptance or approval. Constructive acceptance or constructive approval requirements do not apply if there is a disagreement over quantity, quality, or Contractor compliance with a contract provision. These requirements also do not compel Government officials to accept work or services, approve Contractor estimates, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(ii) The prompt payment regulations at 5 CFR 1315.10(c) do not require the Government to pay interest penalties if payment delays are due to disagreement between the Government and the Contractor over the payment amount or other issues involving contract compliance, or on amounts temporarily withheld or retained in accordance with the terms of the contract. The Government and the Contractor shall resolve claims involving disputes, and any interest that may be payable in accordance with the clause at FAR 52.233-1, Disputes.

(5) Discounts for prompt payment. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if the Government takes a discount for prompt payment improperly. The Government will calculate the interest penalty in accordance with the prompt payment regulations at 5 CFR part 1315.

(6) Additional interest penalty. (i) The designated payment office will pay a penalty amount, calculated in accordance with the prompt payment regulations at 5 CFR part 1315 in addition to the interest penalty amount only if--

(A) The Government owes an interest penalty of \$1 or more;

(B) The designated payment office does not pay the interest penalty within 10 days after the date the invoice amount is paid; and

(C) The Contractor makes a written demand to the designated payment office for additional penalty payment, in accordance with paragraph (a)(6)(ii) of this clause, postmarked not later than 40 days after the date the invoice amount is paid.

(ii)(A) The Contractor shall support written demands for additional penalty payments with the following data. The Government will not request any additional data. The Contractor shall--

(1) Specifically assert that late payment interest is due under a specific invoice, and request payment of all overdue late payment interest penalty and such additional penalty as may be required;

(2) Attach a copy of the invoice on which the unpaid late payment interest was due; and

(3) State that payment of the principal has been received, including the date of receipt.

(B) If there is no postmark or the postmark is illegible--

(1) The designated payment office that receives the demand will annotate it with the date of receipt provided the demand is received on or before the 40th day after payment was made; or

(2) If the designated payment office fails to make the required annotation, the Government will determine the demand's validity based on the date the Contractor has placed on the demand, provided such date is no later than the 40th day after payment was made.

(b) Contract financing payments. If this contract provides for contract financing, the Government will make contract financing payments in accordance with the applicable contract financing clause.

(c) Subcontract clause requirements. The Contractor shall include in each subcontract for property or services (including a material supplier) for the purpose of performing this contract the following:

(1) Prompt payment for subcontractors. A payment clause that obligates the Contractor to pay the subcontractor for satisfactory performance under its subcontract not later than 7 days from receipt of payment out of such amounts as are paid to the Contractor under this contract.

(2) Interest for subcontractors. An interest penalty clause that obligates the Contractor to pay to the subcontractor an interest penalty for each payment not made in accordance with the payment clause--

(i) For the period beginning on the day after the required payment date and ending on the date on which payment of the amount due is made; and

(ii) Computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contract Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(3) Subcontractor clause flowdown. A clause requiring each subcontractor to use:

(i) Include a payment clause and an interest penalty clause conforming to the standards set forth in paragraphs (c)(1) and (c)(2) of this clause in each of its subcontracts; and

(ii) Require each of its subcontractors to include such clauses in their subcontracts with each lower-tier subcontractor or supplier.

(d) Subcontract clause interpretation. The clauses required by paragraph (c) of this clause shall not be construed to impair the right of the Contractor or a subcontractor at any tier to negotiate, and to include in their subcontract, provisions that--

(1) Retainage permitted. Permit the Contractor or a subcontractor to retain (without cause) a specified percentage of each progress payment otherwise due to a subcontractor for satisfactory performance under the subcontract without incurring any obligation to pay a late payment interest penalty, in accordance with terms and conditions agreed to by the parties to the subcontract, giving such recognition as the parties deem appropriate to the ability of a subcontractor to furnish a performance bond and a payment bond;

(2) Withholding permitted. Permit the Contractor or subcontractor to make a determination that part or all of the subcontractor's request for payment may be withheld in accordance with the subcontract agreement; and

(3) Withholding requirements. Permit such withholding without incurring any obligation to pay a late payment penalty if--

(i) A notice conforming to the standards of paragraph (g) of this clause previously has been furnished to the subcontractor; and

(ii) The Contractor furnishes to the Contracting Officer a copy of any notice issued by a Contractor pursuant to paragraph (d)(3)(i) of this clause.

(e) Subcontractor withholding procedures. If a Contractor, after making a request for payment to the Government but before making a payment to a subcontractor for the subcontractor's performance covered by the payment request,

discovers that all or a portion of the payment otherwise due such subcontractor is subject to withholding from the subcontractor in accordance with the subcontract agreement, then the Contractor shall--

(1) Subcontractor notice. Furnish to the subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon ascertaining the cause giving rise to a withholding, but prior to the due date for subcontractor payment;

(2) Contracting Officer notice. Furnish to the Contracting Officer, as soon as practicable, a copy of the notice furnished to the subcontractor pursuant to paragraph (e)(1) of this clause;

(3) Subcontractor progress payment reduction. Reduce the subcontractor's progress payment by an amount not to exceed the amount specified in the notice of withholding furnished under paragraph (e)(1) of this clause;

(4) Subsequent subcontractor payment. Pay the subcontractor as soon as practicable after the correction of the identified subcontract performance deficiency, and--

(i) Make such payment within--

(A) Seven days after correction of the identified subcontract performance deficiency (unless the funds therefor must be recovered from the Government because of a reduction under paragraph (e)(5)(i)) of this clause; or

(B) Seven days after the Contractor recovers such funds from the Government; or

(ii) Incur an obligation to pay a late payment interest penalty computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty;

(5) Notice to Contracting Officer. Notify the Contracting Officer upon--

(i) Reduction of the amount of any subsequent certified application for payment; or

(ii) Payment to the subcontractor of any withheld amounts of a progress payment, specifying--

(A) The amounts withheld under paragraph (e)(1) of this clause; and

(B) The dates that such withholding began and ended; and

(6) Interest to Government. Be obligated to pay to the Government an amount equal to interest on the withheld payments (computed in the manner provided in 31 U.S.C. 3903(c)(1)), from the 8th day after receipt of the withheld amounts from the Government until--

(i) The day the identified subcontractor performance deficiency is corrected; or

(ii) The date that any subsequent payment is reduced under paragraph (e)(5)(i) of this clause.

(f) Third-party deficiency reports--(1) Withholding from subcontractor. If a Contractor, after making payment to a first-tier subcontractor, receives from a supplier or subcontractor of the first-tier subcontractor (hereafter referred to as a "second-tier subcontractor") a written notice in accordance with section 2 of the Act of August 24, 1935 (40 U.S.C. 270b, Miller Act), asserting a deficiency in such first-tier subcontractor's performance under the contract for which the Contractor may be ultimately liable, and the Contractor determines that all or a portion of future payments

otherwise due such first-tier subcontractor is subject to withholding in accordance with the subcontract agreement, the Contractor may, without incurring an obligation to pay an interest penalty under paragraph (e)(6) of this clause--

(i) Furnish to the first-tier subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon making such determination; and

(ii) Withhold from the first-tier subcontractor's next available progress payment or payments an amount not to exceed the amount specified in the notice of withholding furnished under paragraph (f)(1)(i) of this clause.

(2) Subsequent payment or interest charge. As soon as practicable, but not later than 7 days after receipt of satisfactory written notification that the identified subcontract performance deficiency has been corrected, the Contractor shall--

(i) Pay the amount withheld under paragraph (f)(1)(ii) of this clause to such first-tier subcontractor; or

(ii) Incur an obligation to pay a late payment interest penalty to such first-tier subcontractor computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(g) Written notice of subcontractor withholding. The Contractor shall issue a written notice of any withholding to a subcontractor (with a copy furnished to the Contracting Officer), specifying--

(1) The amount to be withheld;

(2) The specific causes for the withholding under the terms of the subcontract; and

(3) The remedial actions to be taken by the subcontractor in order to receive payment of the amounts withheld.

(h) Subcontractor payment entitlement. The Contractor may not request payment from the Government of any amount withheld or retained in accordance with paragraph (d) of this clause until such time as the Contractor has determined and certified to the Contracting Officer that the subcontractor is entitled to the payment of such amount.

(i) Prime-subcontractor disputes. A dispute between the Contractor and subcontractor relating to the amount or entitlement of a subcontractor to a payment or a late payment interest penalty under a clause included in the subcontract pursuant to paragraph (c) of this clause does not constitute a dispute to which the Government is a party. The Government may not be interpleaded in any judicial or administrative proceeding involving such a dispute.

(j) Preservation of prime-subcontractor rights. Except as provided in paragraph (i) of this clause, this clause shall not limit or impair any contractual, administrative, or judicial remedies otherwise available to the Contractor or a subcontractor in the event of a dispute involving late payment or nonpayment by the Contractor or deficient subcontract performance or nonperformance by a subcontractor.

(k) Non-recourse for prime contractor interest penalty. The Contractor's obligation to pay an interest penalty to a subcontractor pursuant to the clauses included in a subcontract under paragraph (c) of this clause shall not be construed to be an obligation of the Government for such interest penalty. A cost-reimbursement claim may not include any amount for reimbursement of such interest penalty.

(l) Overpayments. If the Contractor becomes aware of a duplicate payment or that the Government has otherwise overpaid on an invoice payment, the Contractor shall immediately notify the Contracting Officer and request instructions for disposition of the overpayment.

(End of clause)

52.232-33 PAYMENT BY ELECTRONIC FUNDS TRANSFER—CENTRAL CONTRACTOR REGISTRATION (MAY 1999)

(a) Method of payment. (1) All payments by the Government under this contract shall be made by electronic funds transfer (EFT), except as provided in paragraph (a)(2) of this clause. As used in this clause, the term "EFT" refers to the funds transfer and may also include the payment information transfer.

(2) In the event the Government is unable to release one or more payments by EFT, the Contractor agrees to either--

(i) Accept payment by check or some other mutually agreeable method of payment; or

(ii) Request the Government to extend the payment due date until such time as the Government can make payment by EFT (but see paragraph (d) of this clause).

(b) Contractor's EFT information. The Government shall make payment to the Contractor using the EFT information contained in the Central Contractor Registration (CCR) database. In the event that the EFT information changes, the Contractor shall be responsible for providing the updated information to the CCR database.

(c) Mechanisms for EFT payment. The Government may make payment by EFT through either the Automated Clearing House (ACH) network, subject to the rules of the National Automated Clearing House Association, or the Fedwire Transfer System. The rules governing Federal payments through the ACH are contained in 31 CFR part 210.

(d) Suspension of payment. If the Contractor's EFT information in the CCR database is incorrect, then the Government need not make payment to the Contractor under this contract until correct EFT information is entered into the CCR database; and any invoice or contract financing request shall be deemed not to be a proper invoice for the purpose of prompt payment under this contract. The prompt payment terms of the contract regarding notice of an improper invoice and delays in accrual of interest penalties apply.

(e) Contractor EFT arrangements. If the Contractor has identified multiple payment receiving points (i.e., more than one remittance address and/or EFT information set) in the CCR database, and the Contractor has not notified the Government of the payment receiving point applicable to this contract, the Government shall make payment to the first payment receiving point (EFT information set or remittance address as applicable) listed in the CCR database.

(f) Liability for uncompleted or erroneous transfers. (1) If an uncompleted or erroneous transfer occurs because the Government used the Contractor's EFT information incorrectly, the Government remains responsible for--

(i) Making a correct payment;

(ii) Paying any prompt payment penalty due; and

(iii) Recovering any erroneously directed funds.

(2) If an uncompleted or erroneous transfer occurs because the Contractor's EFT information was incorrect, or was revised within 30 days of Government release of the EFT payment transaction instruction to the Federal Reserve System, and--

(i) If the funds are no longer under the control of the payment office, the Government is deemed to have made payment and the Contractor is responsible for recovery of any erroneously directed funds; or

(ii) If the funds remain under the control of the payment office, the Government shall not make payment, and the provisions of paragraph (d) of this clause shall apply.

(g) EFT and prompt payment. A payment shall be deemed to have been made in a timely manner in accordance with the prompt payment terms of this contract if, in the EFT payment transaction instruction released to the Federal Reserve System, the date specified for settlement of the payment is on or before the prompt payment due date, provided the specified payment date is a valid date under the rules of the Federal Reserve System.

(h) EFT and assignment of claims. If the Contractor assigns the proceeds of this contract as provided for in the assignment of claims terms of this contract, the Contractor shall require as a condition of any such assignment, that the assignee shall register in the CCR database and shall be paid by EFT in accordance with the terms of this clause. In all respects, the requirements of this clause shall apply to the assignee as if it were the Contractor. EFT information that shows the ultimate recipient of the transfer to be other than the Contractor, in the absence of a proper assignment of claims acceptable to the Government, is incorrect EFT information within the meaning of paragraph (d) of this clause.

(i) Liability for change of EFT information by financial agent. The Government is not liable for errors resulting from changes to EFT information made by the Contractor's financial agent.

(j) Payment information. The payment or disbursing office shall forward to the Contractor available payment information that is suitable for transmission as of the date of release of the EFT instruction to the Federal Reserve System. The Government may request the Contractor to designate a desired format and method(s) for delivery of payment information from a list of formats and methods the payment office is capable of executing. However, the Government does not guarantee that any particular format or method of delivery is available at any particular payment office and retains the latitude to use the format and delivery method most convenient to the Government. If the Government makes payment by check in accordance with paragraph (a) of this clause, the Government shall mail the payment information to the remittance address contained in the CCR database.

(End of Clause)

52.232-5002 CONTINUING CONTRACTS (ALTERNATE) (MAR 1995)--EFARS

(a) Funds are not available at the inception of this contract to cover the entire contract price. The sum of **\$100** has been reserved for this contract and is available for payment to the contractor during the current fiscal year. It is expected that Congress will make appropriations for future fiscal years from which additional funds, together with funds provided by one or more non-federal project sponsors will be reserved for this contract. The liability of the United States for payments beyond the funds reserved for this contract is contingent on the reservation of additional funds.

(b) Failure to make payments in excess of the amount currently reserved, or that may be reserved from time to time, shall not be considered a breach of this contract, and shall not entitle the contractor to a price adjustment under the terms of this contract except as specifically provided in paragraphs (e) and (h) below.

(c) The Government may at any time reserve additional funds for payments under the contract if there are funds available for such purpose. The contracting officer will promptly notify the contractor of any additional funds reserved for the contract by issuing an administrative modification to the contract.

(d) If earnings will be such that funds reserved for the contract will be exhausted before the end of any fiscal year, the contractor shall give written notice to the contracting officer of the estimated date of exhaustion and the amount of additional funds which will be needed to meet payments due or to become due under this contract during that fiscal year. This notice shall be given not less than 45 nor more than 60 days prior to the estimated date of exhaustion.

(e) No payments will be made after exhaustion of funds except to the extent that additional funds are reserved for the contract. If and when sufficient additional funds are reserved, the contractor shall be entitled to simple interest on any payment that the contracting officer determines was actually earned under the terms of this contract and would have been made except for exhaustion of funds. Interest shall be computed from the time such payment would otherwise have been made until actually or constructively made, and shall be at the rate established by the Secretary of the Treasury pursuant to Public Law 92-41, 85 STAT 97, as in effect on the first day of the delay in such payment.

(f) Any suspension, delay, or interruption of work arising from exhaustion or anticipated exhaustion of funds shall not constitute a breach of this contract and shall not entitle the contractor to any price adjustment under a "Suspension of Work" or similar clause or in any other manner under this contract.

(g) An equitable adjustment in performance time shall be made for any increase in the time required for performance of any part of the work arising from exhaustion of funds or the reasonable anticipation of exhaustion of funds.

(h) If, upon the expiration of sixty (60) days after the beginning of the fiscal year following an exhaustion of funds, the Government has failed to reserve sufficient additional funds to cover payments otherwise due, the contractor, by written notice delivered to the contracting officer at any time before such additional funds are reserved, may elect to treat his right to proceed with the work as having been terminated. Such a termination shall be at no cost to the Government, except that, to the extent that additional funds to make payment therefore are allocated to this contract, it may be treated as a termination for the convenience of the Government.

(i) If at any time it becomes apparent that the funds reserved for any fiscal year are in excess of the funds required to meet all payments due or to become due the contractor because of work performed and to be performed under this contract during the fiscal year, the Government reserves the right, after notice to the contractor, to reduce said reservation by the amount of such excess.

(j) The term "Reservation" means monies that have been set aside and made available for payments under this contract.

(End of clause)

52.233-1 DISPUTES. (JUL 2002)

(a) This contract is subject to the Contract Disputes Act of 1978, as amended (41 U.S.C. 601-613).

(b) Except as provided in the Act, all disputes arising under or relating to this contract shall be resolved under this clause.

(c) Claim, as used in this clause, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to this contract. However, a written demand or written assertion by the Contractor seeking the payment of money exceeding \$100,000 is not a claim under the Act until certified. A voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim under the Act. The submission may be converted to a claim under the Act, by complying with the submission and certification requirements of this clause, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.

(d)(1) A claim by the Contractor shall be made in writing and, unless otherwise stated in this contract, submitted within 6 years after accrual of the claim to the Contracting Officer for a written decision. A claim by the Government against the Contractor shall be subject to a written decision by the Contracting Officer.

(2)(i) The contractors shall provide the certification specified in subparagraph (d)(2)(iii) of this clause when submitting any claim -

(A) Exceeding \$100,000; or

(B) Regardless of the amount claimed, when using -

(1) Arbitration conducted pursuant to 5 U.S.C. 575-580; or

(2) Any other alternative means of dispute resolution (ADR) technique that the agency elects to handle in accordance with the Administrative Dispute Resolution Act (ADRA).

(ii) The certification requirement does not apply to issues in controversy that have not been submitted as all or part of a claim.

(iii) The certification shall state as follows: "I certify that the claim is made in good faith; that the supporting data are accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the contract adjustment for which the Contractor believes the Government is liable; and that I am duly authorized to certify the claim on behalf of the Contractor.

(3) The certification may be executed by any person duly authorized to bind the Contractor with respect to the claim.

(e) For Contractor claims of \$100,000 or less, the Contracting Officer must, if requested in writing by the Contractor, render a decision within 60 days of the request. For Contractor-certified claims over \$100,000, the Contracting Officer must, within 60 days, decide the claim or notify the Contractor of the date by which the decision will be made.

(f) The Contracting Officer's decision shall be final unless the Contractor appeals or files a suit as provided in the Act.

(g) If the claim by the Contractor is submitted to the Contracting Officer or a claim by the Government is presented to the Contractor, the parties, by mutual consent, may agree to use alternative dispute resolution (ADR). If the Contractor refuses an offer for ADR, the Contractor shall inform the Contracting Officer, in writing, of the Contractor's specific reasons for rejecting the request.

(h) The Government shall pay interest on the amount found due and unpaid from (1) the date the Contracting Officer receives the claim (certified, if required); or (2) the date that payment otherwise would be due, if that date is later, until the date of payment. With regard to claims having defective certifications, as defined in (FAR) 48 CFR 33.201, interest shall be paid from the date that the Contracting Officer initially receives the claim. Simple interest on claims shall be paid at the rate, fixed by the Secretary of the Treasury as provided in the Act, which is applicable to the period during which the Contracting Officer receives the claim and then at the rate applicable for each 6-month period as fixed by the Treasury Secretary during the pendency of the claim.

(i) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under the contract, and comply with any decision of the Contracting Officer.

(End of clause)

52.233-3 PROTEST AFTER AWARD (AUG. 1996)

(a) Upon receipt of a notice of protest (as defined in FAR 33.101) or a determination that a protest is likely (see FAR 33.102(d)), the Contracting Officer may, by written order to the Contractor, direct the Contractor to stop performance of the work called for by this contract. The order shall be specifically identified as a stop-work order issued under this clause. Upon receipt of the order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the order during the period of work stoppage. Upon receipt of the final decision in the protest, the Contracting Officer shall either--

(1) Cancel the stop-work order; or

(2) Terminate the work covered by the order as provided in the Default, or the Termination for Convenience of the Government, clause of this contract.

(b) If a stop-work order issued under this clause is canceled either before or after a final decision in the protest, the Contractor shall resume work. The Contracting Officer shall make an equitable adjustment in the delivery schedule or contract price, or both, and the contract shall be modified, in writing, accordingly, if--

(1) The stop-work order results in an increase in the time required for, or in the Contractor's cost properly allocable to,

the performance of any part of this contract; and

(2) The Contractor asserts its right to an adjustment within 30 days after the end of the period of work stoppage; provided, that if the Contracting Officer decides the facts justify the action, the Contracting Officer may receive and act upon a proposal at any time before final payment under this contract.

(c) If a stop-work order is not canceled and the work covered by the order is terminated for the convenience of the Government, the Contracting Officer shall allow reasonable costs resulting from the stop-work order in arriving at the termination settlement.

(d) If a stop-work order is not canceled and the work covered by the order is terminated for default, the Contracting Officer shall allow, by equitable adjustment or otherwise, reasonable costs resulting from the stop-work order.

(e) The Government's rights to terminate this contract at any time are not affected by action taken under this clause.

(f) If, as the result of the Contractor's intentional or negligent misstatement, misrepresentation, or miscertification, a protest related to this contract is sustained, and the Government pays costs, as provided in FAR 33.102(b)(2) or 33.104(h)(1), the Government may require the Contractor to reimburse the Government the amount of such costs. In addition to any other remedy available, and pursuant to the requirements of Subpart 32.6, the Government may collect this debt by offsetting the amount against any payment due the Contractor under any contract between the Contractor and the Government.

(End of clause)

52.236-2 DIFFERING SITE CONDITIONS (APR 1984)

As prescribed in 36.502, insert the following clause in solicitations and contracts when a fixed-price construction contract or a fixed-price dismantling, demolition, or removal of improvements contract is contemplated and the contract amount is expected to exceed the small purchase limitation. The Contracting Officer may insert the clause in solicitations and contracts when a fixed-price construction or a fixed-price contract for dismantling, demolition, or removal of improvements is contemplated and the contract amount is expected to be within the small purchase limitation.

(a) The Contractor shall promptly, and before the conditions are disturbed, give a written notice to the Contracting Officer of

(1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or

(2) unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract.

(b) The Contracting Officer shall investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, an equitable adjustment shall be made under this clause and the contract modified in writing accordingly.

(c) No request by the Contractor for an equitable adjustment to the contract under this clause shall be allowed, unless the Contractor has given the written notice required; provided, that the time prescribed in (a) above for giving written notice may be extended by the Contracting Officer.

(d) No request by the Contractor for an equitable adjustment to the contract for differing site conditions shall be allowed if made after final payment under this contract.

(End of clause)

52.236-3 SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK (APR 1984)

(a) The Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to

(1) conditions bearing upon transportation, disposal, handling, and storage of materials;

(2) the availability of labor, water, electric power, and roads;

(3) uncertainties of weather, river stages, tides, or similar physical conditions at the site;

(4) the conformation and conditions of the ground; and (5) the character of equipment and facilities needed preliminary to and during work performance. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by the Government, as well as from the drawings and specifications made a part of this contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the Government.

(b) The Government assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the Government. Nor does the Government assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

(End of clause)

52.236-5 MATERIAL AND WORKMANSHIP (APR 1984)

(a) All equipment, material, and articles incorporated into the work covered by this contract shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in this contract. References in the specifications to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of the Contracting Officer, is equal to that named in the specifications, unless otherwise specifically provided in this contract.

(b) The Contractor shall obtain the Contracting Officer's approval of the machinery and mechanical and other equipment to be incorporated into the work. When requesting approval, the Contractor shall furnish to the Contracting Officer the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the machinery and mechanical and other equipment. When required by this contract or by the Contracting Officer, the Contractor shall also obtain the Contracting Officer's approval of the material or articles which the Contractor contemplates incorporating into the work. When requesting approval, the Contractor shall provide full information concerning the material or articles. When directed to do so, the Contractor shall submit samples for approval at the Contractor's expense, with all shipping charges prepaid. Machinery, equipment, material, and articles that do not have the required approval shall be installed or used at the risk of subsequent rejection.

(c) All work under this contract shall be performed in a skillful and workmanlike manner. The Contracting Officer may require, in writing, that the Contractor remove from the work any employee the Contracting Officer deems incompetent, careless, or otherwise objectionable.

(End of clause)

52.236-7 PERMITS AND RESPONSIBILITIES (NOV 1991)

The Contractor shall, without additional expense to the Government, be responsible for obtaining any necessary licenses and permits, and for complying with any Federal, State, and municipal laws, codes, and regulations applicable to the performance of the work. The Contractor shall also be responsible for all damages to persons or property that occur as a result of the Contractor's fault or negligence. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work, except for any completed unit of work which may have been accepted under the contract.

(End of clause)

52.236-8 OTHER CONTRACTS (APR 1984)

The Government may undertake or award other contracts for additional work at or near the site of the work under this contract. The Contractor shall fully cooperate with the other contractors and with Government employees and shall carefully adapt scheduling and performing the work under this contract to accommodate the additional work, heeding any direction that may be provided by the Contracting Officer. The Contractor shall not commit or permit any act that will interfere with the performance of work by any other contractor or by Government employees.

(End of clause)

52.236-9 PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS (APR 1984)

(a) The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site, which are not to be removed and which do not unreasonably interfere with the work required under this contract. The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during contract performance, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the Contracting Officer.

(b) The Contractor shall protect from damage all existing improvements and utilities

(1) at or near the work site, and

(2) on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. The Contractor shall repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

(End of clause)

52.236-10 OPERATIONS AND STORAGE AREAS (APR 1984)

(a) The Contractor shall confine all operations (including storage of materials) on Government premises to areas authorized or approved by the Contracting Officer. The Contractor shall hold and save the Government, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance.

(b) Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by the Contractor only with the approval of the Contracting Officer and shall be built with labor and materials furnished by the Contractor without expense to the Government. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work. With the written consent of the Contracting Officer, the buildings and utilities may be abandoned and need not be removed.

(c) The Contractor shall, under regulations prescribed by the Contracting Officer, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Contracting Officer. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

(End of clause)

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(b) Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by the Contractor only with the approval of the Contracting Officer and shall be built with labor and materials furnished by the Contractor without expense to the Government. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work. With the written consent of the Contracting Officer, the buildings and utilities may be abandoned and need not be removed.

(c) The Contractor shall, under regulations prescribed by the Contracting Officer, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Contracting Officer. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation.

When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

(End of clause)

52.236-11 USE AND POSSESSION PRIOR TO COMPLETION (APR 1984)

(a) The Government shall have the right to take possession of or use any completed or partially completed part of the work. Before taking possession of or using any work, the Contracting Officer shall furnish the Contractor a list of items of work remaining to be performed or corrected on those portions of the work that the Government intends to take possession of or use. However, failure of the Contracting Officer to list any item of work shall not relieve the

Contractor of responsibility for complying with the terms of the contract. The Government's possession or use shall not be deemed an acceptance of any work under the contract.

(b) While the Government has such possession or use, the Contractor shall be relieved of the responsibility for the loss of or damage to the work resulting from the Government's possession or use, notwithstanding the terms of the clause in this contract entitled "Permits and Responsibilities." If prior possession or use by the Government delays the progress of the work or causes additional expense to the Contractor, an equitable adjustment shall be made in the contract price or the time of completion, and the contract shall be modified in writing accordingly.

(End of clause)

52.236-12 CLEANING UP (APR 1984)

The Contractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials. Before completing the work, the Contractor shall remove from the work and premises any rubbish, tools, scaffolding, equipment, and materials that are not the property of the Government. Upon completing the work, the Contractor shall leave the work area in a clean, neat, and orderly condition satisfactory to the Contracting Officer.

(End of clause)

52.236-13 ACCIDENT PREVENTION (NOV 1991) – ALTERNATE I (NOV 1991)

(a) The Contractor shall provide and maintain work environments and procedures which will

(1) safeguard the public and Government personnel, property, materials, supplies, and equipment exposed to Contractor operations and activities;

(2) avoid interruptions of Government operations and delays in project completion dates; and

(3) control costs in the performance of this contract.

(b) For these purposes on contracts for construction or dismantling, demolition, or removal of improvements, the Contractor shall-

(1) Provide appropriate safety barricades, signs, and signal lights;

(2) Comply with the standards issued by the Secretary of Labor at 29 CFR Part 1926 and 29 CFR Part 1910; and

(3) Ensure that any additional measures the Contracting Officer determines to be reasonably necessary for the purposes are taken.

(f) If this contract is for construction or dismantling, demolition or removal of improvements with any Department of Defense agency or component, the Contractor shall comply with all pertinent provisions of the latest version of U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, in effect on the date of the solicitation.

(d) Whenever the Contracting Officer becomes aware of any noncompliance with these requirements or any condition which poses a serious or imminent danger to the health or safety of the public or Government personnel, the Contracting Officer shall notify the Contractor orally, with written confirmation, and request immediate initiation of corrective action. This notice, when delivered to the Contractor or the Contractor's representative at the work site, shall be deemed sufficient notice of the noncompliance and that corrective action is required. After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to promptly take

corrective action, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor shall not be entitled to any equitable adjustment of the contract price or extension of the performance schedule on any stop work order issued under this clause.

(e) The Contractor shall insert this clause, including this paragraph (e), with appropriate changes in the designation of the parties, in subcontracts.

(f) Before commencing the work, the Contractor shall-

(1) Submit a written proposed plan for implementing this clause. The plan shall include an analysis of the significant hazards to life, limb, and property inherent in contract work performance and a plan for controlling these hazards; and

(2) Meet with representatives of the Contracting Officer to discuss and develop a mutual understanding relative to administration of the overall safety program.

(End of clause)

52.236-15 SCHEDULES FOR CONSTRUCTION CONTRACTS (APR 1984)

(a) The Contractor shall, within five days after the work commences on the contract or another period of time determined by the Contracting Officer, prepare and submit to the Contracting Officer for approval three copies of a practicable schedule showing the order in which the Contractor proposes to perform the work, and the dates on which the Contractor contemplates starting and completing the several salient features of the work (including acquiring materials, plant, and equipment). The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion by any given date during the period. If the Contractor fails to submit a schedule within the time prescribed, the Contracting Officer may withhold approval of progress payments until the Contractor submits the required schedule.

(b) The Contractor shall enter the actual progress on the chart as directed by the Contracting Officer, and upon doing so shall immediately deliver three copies of the annotated schedule to the Contracting Officer. If, in the opinion of the Contracting Officer, the Contractor falls behind the approved schedule, the Contractor shall take steps necessary to improve its progress, including those that may be required by the Contracting Officer, without additional cost to the Government. In this circumstance, the Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules in chart form as the Contracting Officer deems necessary to demonstrate how the approved rate of progress will be regained.

(c) Failure of the Contractor to comply with the requirements of the Contracting Officer under this clause shall be grounds for a determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient

diligence to ensure completion within the time specified in the contract. Upon making this determination, the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part of it, in accordance with the default terms of this contract.

(End of clause)

52.236-17 LAYOUT OF WORK (APR 1984)

The Contractor shall lay out its work from Government established base lines and bench marks indicated on the drawings, and shall be responsible for all measurements in connection with the layout. The Contractor shall furnish,

at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the work. The Contractor shall be responsible for executing the work to the lines and grades that may be established or indicated by the Contracting Officer. The Contractor shall also be responsible for maintaining and preserving all stakes and other marks established by the Contracting Officer until authorized to remove them. If such marks are destroyed by the Contractor or through its negligence before their removal is authorized, the Contracting Officer may replace them and deduct the expense of the replacement from any amounts due or to become due to the Contractor.

(End of clause)

52.236-21 SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (FEB 1997)

(a) The Contractor shall keep on the work site a copy of the drawings and specifications and shall at all times give the Contracting Officer access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In case of discrepancy in the figures, in the drawings, or in the specifications, the matter shall be promptly submitted to the Contracting Officer, who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at its own risk and expense. The Contracting Officer shall furnish from time to time such detailed drawings and other information as considered necessary, unless otherwise provided.

(b) Wherever in the specifications or upon the drawings the words "directed", "required", "ordered", "designated", "prescribed", or words of like import are used, it shall be understood that the "direction", "requirement", "order", "designation", or "prescription", of the Contracting Officer is intended and similarly the words "approved", "acceptable", "satisfactory", or words of like import shall mean "approved by," or "acceptable to", or "satisfactory to" the Contracting Officer, unless otherwise expressly stated.

(c) Where "as shown," "as indicated", "as detailed", or words of similar import are used, it shall be understood that the reference is made to the drawings accompanying this contract unless stated otherwise. The word "provided" as used herein shall be understood to mean "provide complete in place," that is "furnished and installed".

(d) Shop drawings means drawings, submitted to the Government by the Contractor, subcontractor, or any lower tier subcontractor pursuant to a construction contract, showing in detail (1) the proposed fabrication and assembly of structural elements, and (2) the installation (i.e., fit, and attachment details) of materials or equipment. It includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the contractor to explain in detail specific portions of the work required by the contract. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

(e) If this contract requires shop drawings, the Contractor shall coordinate all such drawings, and review them for accuracy, completeness, and compliance with contract requirements and shall indicate its approval thereon as evidence of such coordination and review. Shop drawings submitted to the Contracting Officer without evidence of the Contractor's approval may be returned for resubmission. The Contracting Officer will indicate an approval or disapproval of the shop drawings and if not approved as submitted shall indicate the Government's reasons therefor. Any work done before such approval shall be at the Contractor's risk. Approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract, except with respect to variations described and approved in accordance with (f) below.

(f) If shop drawings show variations from the contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the Contracting Officer approves any such variation, the Contracting Officer shall issue an appropriate contract modification, except that, if the variation is minor or does

not involve a change in price or in time of performance, a modification need not be issued.

(g) The Contractor shall submit to the Contracting Officer for approval four copies (unless otherwise indicated) of all shop drawings as called for under the various headings of these specifications. Three sets (unless otherwise indicated) of all shop drawings, will be retained by the Contracting Officer and one set will be returned to the Contractor.

(End of clause)

52.236-26 PRECONSTRUCTION CONFERENCE (FEB 1995)

If the Contracting Officer decides to conduct a preconstruction conference, the successful offeror will be notified and will be required to attend. The Contracting Officer's notification will include specific details regarding the date, time, and location of the conference, any need for attendance by subcontractors, and information regarding the items to be discussed.

(End of clause)

52.242-13 BANKRUPTCY (JUL 1995)

In the event the Contractor enters into proceedings relating to bankruptcy, whether voluntary or involuntary, the Contractor agrees to furnish, by certified mail or electronic commerce method authorized by the contract, written notification of the bankruptcy to the Contracting Officer responsible for administering the contract. This notification shall be furnished within five days of the initiation of the proceedings relating to bankruptcy filing. This notification shall include the date on which the bankruptcy petition was filed, the identity of the court in which the bankruptcy petition was filed, and a listing of Government contract numbers and contracting offices for all Government contracts against which final payment has not been made. This obligation remains in effect until final payment under this contract.

(End of clause)

52.242-14 SUSPENSION OF WORK (APR 1984)

(a) The Contracting Officer may order the Contractor, in writing, to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Contracting Officer determines appropriate for the convenience of the Government.

(b) If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted (1) by an act of the Contracting Officer in the administration of this contract, or (2) by the Contracting Officer's failure to act within the time specified in this contract (or within a reasonable time if not specified), an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) necessarily caused by the unreasonable suspension, delay, or interruption, and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor, or for which an equitable adjustment is provided for or excluded under any other term or condition of this contract. (c) A claim under this clause shall not be allowed (1) for any costs incurred more than 20 days before the Contractor shall have notified the Contracting Officer in writing of the act or failure to act involved (but this requirement shall not apply as to a claim resulting from a suspension order), and (2) unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of the suspension, delay, or interruption, but not later than the date of final payment under the contract.

(End of clause)

52.243-4 CHANGES (AUG 1987)

(a) The Contracting Officer may, at any time, without notice to the sureties, if any, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract, including changes--

- (1) In the specifications (including drawings and designs);
- (2) In the method or manner of performance of the work;
- (3) In the Government-furnished facilities, equipment, materials, services, or site; or
- (4) Directing acceleration in the performance of the work.

(b) Any other written or oral order (which, as used in this paragraph (b), includes direction, instruction, interpretation, or determination) from the Contracting Officer that causes a change shall be treated as a change order under this clause; provided, that the Contractor gives the Contracting Officer written notice stating

- (1) the date, circumstances, and source of the order and
- (2) that the Contractor regards the order as a change order.

(c) Except as provided in this clause, no order, statement, or conduct of the Contracting Officer shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment.

(d) If any change under this clause causes an increase or decrease in the Contractor's cost of, or the time required for, the performance of any part of the work under this contract, whether or not changed by any such order, the Contracting Officer shall make an equitable adjustment and modify the contract in writing. However, except for an adjustment based on defective specifications, no adjustment for any change under paragraph (b) of this clause shall be made for any costs incurred more than 20 days before the Contractor gives written notice as required. In the case of defective specifications for which the Government is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the Contractor in attempting to comply with the defective specifications.

(e) The Contractor must assert its right to an adjustment under this clause within 30 days after

(1) receipt of a written change order under paragraph (a) of this clause or (2) the furnishing of a written notice under paragraph (b) of this clause, by submitting to the Contracting Officer a written statement describing the general nature and amount of the proposal, unless this period is extended by the Government. The statement of proposal for adjustment may be included in the notice under paragraph (b) above.

(f) No proposal by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this contract.

(End of clause)

52.244-5 COMPETITION IN SUBCONTRACTING (DEC 1996)

(a) The Contractor shall select subcontractors (including suppliers) on a competitive basis to the maximum practical extent consistent with the objectives and requirements of the contract.

(b) If the Contractor is an approved mentor under the Department of Defense Pilot Mentor-Protege Program (Pub. L. 101-510, section 831 as amended), the Contractor may award subcontracts under this contract on a noncompetitive basis to its proteges.

(End of clause)

52.244-6 SUBCONTRACTS FOR COMMERCIAL ITEMS AND COMMERCIAL COMPONENTS (APR 2003)

(a) Definitions.

"Commercial item", has the meaning contained in the clause at 52.202-1, Definitions.

"Subcontract", includes a transfer of commercial items between divisions, subsidiaries, or affiliates of the Contractor or subcontractor at any tier.

(b) To the maximum extent practicable, the Contractor shall incorporate, and require its subcontractors at all tiers to incorporate, commercial items or nondevelopmental items as components of items to be supplied under this contract.

(c) (1) The Contractor shall insert the following clauses in subcontracts for commercial items:

(i) 52.219-8, Utilization of Small Business Concerns (OCT 2000) (15 U.S.C. 637(d)(2) and (3)), in all subcontracts that offer further subcontracting opportunities. If the subcontract (except subcontracts to small business concerns) exceeds \$500,000 (\$1,000,000 for construction of any public facility), the subcontractor must include 52.219-8 in lower tier subcontracts that offer subcontracting opportunities.

(ii) 52.222-26, Equal Opportunity (Apr 2002) (E.O. 11246).

(iii) 52.222-35, Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era and Other Eligible Veterans (DEC 2001) (38 U.S.C. 4212(a)).

(iv) 52.222-36, Affirmative Action for Workers with Disabilities (JUN 1998) (29 U.S.C. 793).

(v) 52.247-64, Preference for Privately Owned U.S.-Flag Commercial Vessels (APR 2003) (46 U.S.C. Appx 1241 and 10 U.S.C. 2631) (flow down required in accordance with paragraph (d) of FAR clause 52.247-64).

(2) While not required, the Contractor may flow down to subcontracts for commercial items a minimal number of additional clauses necessary to satisfy its contractual obligations.

(d) The Contractor shall include the terms of this clause, including this paragraph (d), in subcontracts awarded under this contract.

(End of clause)

52.246-1 CONTRACTOR INSPECTION REQUIREMENTS (APR 1984)

The Contractor is responsible for performing or having performed all inspections and tests necessary to substantiate that the supplies or services furnished under this contract conform to contract requirements, including any applicable technical requirements for specified manufacturers' parts. This clause takes precedence over any Government inspection and testing required in the contract's specifications, except for specialized inspections or tests specified to be performed solely by the Government.

(End of clause)

52.246-12 INSPECTION OF CONSTRUCTION (AUG 1996)

(a) Definition. "Work" includes, but is not limited to, materials, workmanship, and manufacture and fabrication of components.

(b) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the work performed under the contract conforms to contract requirements. The Contractor shall maintain complete inspection records and make them available to the Government. All work shall be conducted under the general direction of the Contracting Officer and is subject to Government inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the contract.

(c) Government inspections and tests are for the sole benefit of the Government and do not--

(1) Relieve the Contractor of responsibility for providing adequate quality control measures;

(2) Relieve the Contractor of responsibility for damage to or loss of the material before acceptance;

(3) Constitute or imply acceptance; or

(4) Affect the continuing rights of the Government after acceptance of the completed work under paragraph (i) of this section.

(d) The presence or absence of a Government inspector does not relieve the Contractor from any contract requirement, nor is the inspector authorized to change any term or condition of the specification without the Contracting Officer's written authorization.

(e) The Contractor shall promptly furnish, at no increase in contract price, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Contracting Officer. The Government may charge to the Contractor any additional cost of inspection or test when work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes reinspection or retest necessary. The Government shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Special, full size, and performance tests shall be performed as described in the contract.

(f) The Contractor shall, without charge, replace or correct work found by the Government not to conform to contract requirements, unless in the public interest the Government consents to accept the work with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises.

(g) If the Contractor does not promptly replace or correct rejected work, the Government may (1) by contract or otherwise, replace or correct the work and charge the cost to the Contractor or (2) terminate for default the Contractor's right to proceed.

(h) If, before acceptance of the entire work, the Government decides to examine already completed work by removing it or tearing it out, the Contractor, on request, shall promptly furnish all necessary facilities, labor, and material. If the work is found to be defective or nonconforming in any material respect due to the fault of the Contractor or its subcontractors, the Contractor shall defray the expenses of the examination and of satisfactory reconstruction. However, if the work is found to meet contract requirements, the Contracting Officer shall make an equitable adjustment for the additional services involved in the examination and reconstruction, including, if completion of the work was thereby delayed, an extension of time.

(i) Unless otherwise specified in the contract, the Government shall accept, as promptly as practicable after completion and inspection, all work required by the contract or that portion of the work the Contracting Officer determines can be accepted separately. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or the Government's rights under any warranty or guarantee.

(End of clause)

52.246-21 WARRANTY OF CONSTRUCTION (MAR 1994)

(a) In addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph (i) of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or design furnished, or workmanship performed by the Contractor or any subcontractor or supplier at any tier.

(b) This warranty shall continue for a period of 1 year from the date of final acceptance of the work. If the Government takes possession of any part of the work before final acceptance, this warranty shall continue for a period of 1 year from the date the Government takes possession.

(c) The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Government-owned or controlled real or personal property, when that damage is the result of--

(1) The Contractor's failure to conform to contract requirements; or

(2) Any defect of equipment, material, workmanship, or design furnished.

(d) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for 1 year from the date of repair or replacement.

(e) The Contracting Officer shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage.

(f) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the Government shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

(g) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall--

(1) Obtain all warranties that would be given in normal commercial practice;

(2) Require all warranties to be executed, in writing, for the benefit of the Government, if directed by the Contracting Officer; and

(3) Enforce all warranties for the benefit of the Government, if directed by the Contracting Officer.

(h) In the event the Contractor's warranty under paragraph (b) of this clause has expired, the Government may bring suit at its expense to enforce a subcontractor's, manufacturer's, or supplier's warranty.

(i) Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material or design furnished by the Government nor for the repair of any damage that results from any defect in Government-furnished material or design.

(j) This warranty shall not limit the Government's rights under the Inspection and Acceptance clause of this contract with respect to latent defects, gross mistakes, or fraud.

(End of clause)

52.247-34 F.O.B. DESTINATION (NOV 1991)

(a) The term "f.o.b. destination," as used in this clause, means--

(1) Free of expense to the Government, on board the carrier's conveyance, at a specified delivery point where the consignee's facility (plant, warehouse, store, lot, or other location to which shipment can be made) is located; and

(2) Supplies shall be delivered to the destination consignee's wharf (if destination is a port city and supplies are for export), warehouse unloading platform, or receiving dock, at the expense of the Contractor. The Government shall not be liable for any delivery, storage, demurrage, accessorial, or other charges involved before the actual delivery (or "constructive placement" as defined in carrier tariffs) of the supplies to the destination, unless such charges are caused by an act or order of the Government acting in its contractual capacity. If rail carrier is used, supplies shall be delivered to the specified unloading platform of the consignee. If motor carrier (including "piggyback") is used, supplies shall be delivered to truck tailgate at the unloading platform of the consignee, except when the supplies delivered meet the requirements of Item 568 of the National Motor Freight Classification for "heavy or bulky freight." When supplies meeting the requirements of the referenced Item 568 are delivered, unloading (including movement to the tailgate) shall be performed by the consignee, with assistance from the truck driver, if requested. If the contractor uses rail carrier or freight forwarded for less than carload shipments, the contractor shall ensure that the carrier will furnish tailgate delivery, when required, if transfer to truck is required to complete delivery to consignee.

(b) The Contractor shall--

(1)(i) Pack and mark the shipment to comply with contract specifications; or

(ii) In the absence of specifications, prepare the shipment in conformance with carrier requirements;

(2) Prepare and distribute commercial bills of lading;

(3) Deliver the shipment in good order and condition to the point of delivery specified in the contract;

(4) Be responsible for any loss of and/or damage to the goods occurring before receipt of the shipment by the consignee at the delivery point specified in the contract;

(5) Furnish a delivery schedule and designate the mode of delivering carrier; and

(6) Pay and bear all charges to the specified point of delivery.

(End of clause)

52.248-3 VALUE ENGINEERING--CONSTRUCTION (FEB 2000)

(a) General. The Contractor is encouraged to develop, prepare, and submit value engineering change proposals (VECP's) voluntarily. The Contractor shall share in any instant contract savings realized from accepted VECP's, in accordance with paragraph (f) below.

(b) Definitions. "Collateral costs," as used in this clause, means agency costs of operation, maintenance, logistic support, or Government-furnished property.

"Collateral savings," as used in this clause, means those measurable net reductions resulting from a VECP in the agency's overall projected collateral costs, exclusive of acquisition savings, whether or not the acquisition cost changes.

"Contractor's development and implementation costs," as used in this clause, means those costs the Contractor incurs on a VECP specifically in developing, testing, preparing, and submitting the VECP, as well as those costs the Contractor incurs to make the contractual changes required by Government acceptance of a VECP.

"Government costs," as used in this clause, means those agency costs that result directly from developing and implementing the VECP, such as any net increases in the cost of testing, operations, maintenance, and logistic support. The term does not include the normal administrative costs of processing the VECP.

"Instant contract savings," as used in this clause, means the estimated reduction in Contractor cost of performance resulting from acceptance of the VECP, minus allowable Contractor's development and implementation costs, including subcontractors' development and implementation costs (see paragraph (h) below).

"Value engineering change proposal (VECP)" means a proposal that--

(1) Requires a change to this, the instant contract, to implement; and

(2) Results in reducing the contract price or estimated cost without impairing essential functions or characteristics; provided, that it does not involve a change--

(i) In deliverable end item quantities only; or

(ii) To the contract type only.

(c) VECP preparation. As a minimum, the Contractor shall include in each VECP the information described in subparagraphs (1) through (7) below. If the proposed change is affected by contractually required configuration management or similar procedures, the instructions in those procedures relating to format, identification, and priority assignment shall govern VECP preparation. The VECP shall include the following:

(1) A description of the difference between the existing contract requirement and that proposed, the comparative advantages and disadvantages of each, a justification when an item's function or characteristics are being altered, and the effect of the change on the end item's performance.

(2) A list and analysis of the contract requirements that must be changed if the VECP is accepted, including any suggested specification revisions.

(3) A separate, detailed cost estimate for

(i) the affected portions of the existing contract requirement and

(ii) the VECP. The cost reduction associated with the VECP shall take into account the Contractor's allowable development and implementation costs, including any amount attributable to subcontracts under paragraph (h) below.

(4) A description and estimate of costs the Government may incur in implementing the VECP, such as test and evaluation and operating and support costs.

- (5) A prediction of any effects the proposed change would have on collateral costs to the agency.
- (6) A statement of the time by which a contract modification accepting the VECP must be issued in order to achieve the maximum cost reduction, noting any effect on the contract completion time or delivery schedule.
- (7) Identification of any previous submissions of the VECP, including the dates submitted, the agencies and contract numbers involved, and previous Government actions, if known.
- (d) Submission. The Contractor shall submit VECP's to the Resident Engineer at the worksite, with a copy to the Contracting Officer.
- (e) Government action.

(1) The Contracting Officer will notify the Contractor of the status of the VECP within 45 calendar days after the contracting office receives it. If additional time is required, the Contracting Officer will notify the Contractor within the 45-day period and provide the reason for the delay and the expected date of the decision. The Government will process VECP's expeditiously; however, it shall not be liable for any delay in acting upon a VECP.

If the VECP is not accepted, the Contracting Officer will notify the Contractor in writing, explaining the reasons for rejection. The Contractor may withdraw any VECP, in whole or in part, at any time before it is accepted by the Government. The Contracting Officer may require that the Contractor provide written notification before undertaking significant expenditures for VECP effort.

Any VECP may be accepted, in whole or in part, by the Contracting Officer's award of a modification to this contract citing this clause. The Contracting Officer may accept the VECP, even though an agreement on price reduction has not been reached, by issuing the Contractor a notice to proceed with the change. Until a notice to proceed is issued or a contract modification applies a VECP to this contract, the Contractor shall perform in accordance with the existing contract. The decision to accept or reject all or part of any VECP is a unilateral decision made solely at the discretion of the Contracting Officer.

(f) Sharing.

(1) Rates. The Government's share of savings is determined by subtracting Government costs from instant contract savings and multiplying the result by

- (i) 45 percent for fixed-price contracts or
- (ii) 75 percent for cost-reimbursement contracts.

(2) Payment. Payment of any share due the Contractor for use of a VECP on this contract shall be authorized by a modification to this contract to--

- (i) Accept the VECP;
- (ii) Reduce the contract price or estimated cost by the amount of instant contract savings; and
- (iii) Provide the Contractor's share of savings by adding the amount calculated to the contract price or fee.
- (g) Collateral savings. If a VECP is accepted, the Contracting Officer will increase the instant contract amount by 20 percent of any projected collateral savings determined to be realized in a typical year of use after subtracting any Government costs not previously offset. However, the Contractor's share of collateral savings will not exceed the contract's firm-fixed-price or estimated cost, at the time the VECP is accepted, or \$100,000, whichever is greater. The Contracting Officer is the sole determiner of the amount of collateral savings.

(h) Subcontracts. The Contractor shall include an appropriate value engineering clause in any subcontract of \$50,000 or more and may include one in subcontracts of lesser value. In computing any adjustment in this contract's price under paragraph (f) above, the Contractor's allowable development and implementation costs shall include any subcontractor's allowable development and implementation costs clearly resulting from a VECP accepted by the Government under this contract, but shall exclude any value engineering incentive payments to a subcontractor. The Contractor may choose any arrangement for subcontractor value engineering incentive payments; provided, that these payments shall not reduce the Government's share of the savings resulting from the VECP.

(i) Data. The Contractor may restrict the Government's right to use any part of a VECP or the supporting data by marking the following legend on the affected parts:

"These data, furnished under the Value Engineering-- Construction clause of contract, shall not be disclosed outside the Government or duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate a value engineering change proposal submitted under the clause. This restriction does not limit the Government's right to use information contained in these data if it has been obtained or is otherwise available from the Contractor or from another source without limitations." If a VECP is accepted, the Contractor hereby grants the Government unlimited rights in the VECP and supporting data, except that, with respect to data qualifying and submitted as limited rights technical data, the Government shall have the rights specified in the contract modification implementing the VECP and shall appropriately mark the data. (The terms "unlimited rights" and "limited rights" are defined in Part 27 of the Federal Acquisition Regulation.)

(End of clause)

52.249-2 TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) (SEP 1996) - ALTERNATE I (SEP 1996)

(a) The Government may terminate performance of work under this contract in whole or, from time to time, in part if the Contracting Officer determines that a termination is in the Government's interest. The Contracting Officer shall terminate by delivering to the Contractor a Notice of Termination specifying the extent of termination and the effective date.

(b) After receipt of a Notice of Termination, and except as directed by the Contracting Officer, the Contractor shall immediately proceed with the following obligations, regardless of any delay in determining or adjusting any amounts due under this clause:

(1) Stop work as specified in the notice.

(2) Place no further subcontracts or orders (referred to as subcontracts in this clause) for materials, services, or facilities, except as necessary to complete the continued portion of the contract.

(3) Terminate all subcontracts to the extent they relate to the work terminated.

(4) Assign to the Government, as directed by the Contracting Officer, all right, title, and interest of the Contractor under the subcontracts terminated, in which case the Government shall have the right to settle or to pay any termination settlement proposal arising out of those terminations.

(5) With approval or ratification to the extent required by the Contracting Officer, settle all outstanding liabilities and termination settlement proposals arising from the termination of subcontracts; the approval or ratification will be final for purposes of this clause.

(6) As directed by the Contracting Officer, transfer title and deliver to the Government (i) the fabricated or unfabricated parts, work in process, completed work, supplies, and other material produced or acquired for the work

terminated, and (ii) the completed or partially completed plans, drawings, information, and other property that, if the contract had been completed, would be required to be furnished to the Government.

(7) Complete performance of the work not terminated.

(8) Take any action that may be necessary, or that the Contracting Officer may direct, for the protection and preservation of the property related to this contract that is in the possession of the Contractor and in which the Government has or may acquire an interest.

(9) Use its best efforts to sell, as directed or authorized by the Contracting Officer, any property of the types referred to in subparagraph (b)(6) of this clause; provided, however, that the Contractor (i) is not required to extend credit to any purchaser and (ii) may acquire the property under the conditions prescribed by, and at prices approved by, the Contracting Officer. The proceeds of any transfer or disposition will be applied to reduce any payments to be made by the Government under this contract, credited to the price or cost of the work, or paid in any other manner directed by the Contracting Officer.

(c) The Contractor shall submit complete termination inventory schedules no later than 120 days from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 120-day period.

(d) After expiration of the plant clearance period as defined in Subpart 45.6 of the Federal Acquisition Regulation, the Contractor may submit to the Contracting Officer a list, certified as to quantity and quality, of termination inventory not previously disposed of, excluding items authorized for disposition by the Contracting Officer. The Contractor may request the Government to remove those items or enter into an agreement for their storage. Within 15 days, the Government will accept title to those items and remove them or enter into a storage agreement. The Contracting Officer may verify the list upon removal of the items, or if stored, within 45 days from submission of the list, and shall correct the list, as necessary, before final settlement.

(e) After termination, the Contractor shall submit a final termination settlement proposal to the Contracting Officer in the form and with the certification prescribed by the Contracting Officer. The Contractor shall submit the proposal promptly, but no later than 1 year from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 1-year period. However, if the Contracting Officer determines that the facts justify it, a termination settlement proposal may be received and acted on after 1 year or any extension. If the Contractor fails to submit the proposal within the time allowed, the Contracting Officer may determine, on the basis of information available, the amount, if any, due the Contractor because of the termination and shall pay the amount determined.

(f) Subject to paragraph (e) of this clause, the Contractor and the Contracting Officer may agree upon the whole or any part of the amount to be paid or remaining to be paid because of the termination. The amount may include a reasonable allowance for profit on work done. However, the agreed amount, whether under this paragraph (g) or paragraph (g) of this clause, exclusive of costs shown in subparagraph (g)(3) of this clause, may not exceed the total contract price as reduced by (1) the amount of payments previously made and (2) the contract price of work not terminated. The contract shall be modified, and the Contractor paid the agreed amount. Paragraph (g) of this clause shall not limit, restrict, or affect the amount that may be agreed upon to be paid under this paragraph.

(g) If the Contractor and Contracting Officer fail to agree on the whole amount to be paid the Contractor because of the termination of work, the Contracting Officer shall pay the Contractor the amounts determined as follows, but without duplication of any amounts agreed upon under paragraph (f) of this clause:

(1) For contract work performed before the effective date of termination, the total (without duplication of any items) of--

(i) The cost of this work;

(ii) The cost of settling and paying termination settlement proposals under terminated subcontracts that are properly chargeable to the terminated portion of the contract if not included in subdivision (g)(1)(i) of this clause; and

(iii) A sum, as profit on subdivision (g)(1)(i) of this clause, determined by the Contracting Officer under 49.202 of the Federal Acquisition Regulation, in effect on the date of this contract, to be fair and reasonable; however, if it appears that the Contractor would have sustained a loss on the entire contract had it been completed, the Contracting Officer shall allow no profit under this subdivision (iii) and shall reduce the settlement to reflect the indicated rate of loss.

(2) The reasonable costs of settlement of the work terminated, including--

(i) Accounting, legal, clerical, and other expenses reasonably necessary for the preparation of termination settlement proposals and supporting data;

(ii) The termination and settlement of subcontracts (excluding the amounts of such settlements); and

(iii) Storage, transportation, and other costs incurred, reasonably necessary for the preservation, protection, or disposition of the termination inventory.

(h) Except for normal spoilage, and except to the extent that the Government expressly assumed the risk of loss, the Contracting Officer shall exclude from the amounts payable to the Contractor under paragraph (g) of this clause, the fair value, as determined by the Contracting Officer, of property that is destroyed, lost, stolen, or damaged so as to become undeliverable to the Government or to a buyer.

(i) The cost principles and procedures of Part 31 of the Federal Acquisition Regulation, in effect on the date of this contract, shall govern all costs claimed, agreed to, or determined under this clause.

(j) The Contractor shall have the right of appeal, under the Disputes clause, from any determination made by the Contracting Officer under paragraph (e), (g), or (l) of this clause, except that if the Contractor failed to submit the termination settlement proposal or request for equitable adjustment within the time provided in paragraph (e) or (l), respectively, and failed to request a time extension, there is no right of appeal.

(k) In arriving at the amount due the Contractor under this clause, there shall be deducted--

(1) All unliquidated advance or other payments to the Contractor under the terminated portion of this contract;

(2) Any claim which the Government has against the Contractor under this contract; and

(3) The agreed price for, or the proceeds of sale of, materials, supplies, or other things acquired by the Contractor or sold under the provisions of this clause and not recovered by or credited to the Government.

(l) If the termination is partial, the Contractor may file a proposal with the Contracting Officer for an equitable adjustment of the price(s) of the continued portion of the contract. The Contracting Officer shall make any equitable adjustment agreed upon. Any proposal by the Contractor for an equitable adjustment under this clause shall be requested within 90 days from the effective date of termination unless extended in writing by the Contracting Officer.

(m)(1) The Government may, under the terms and conditions it prescribes, make partial payments and payments against costs incurred by the Contractor for the terminated portion of the contract, if the Contracting Officer believes the total of these payments will not exceed the amount to which the Contractor will be entitled.

(2) If the total payments exceed the amount finally determined to be due, the Contractor shall repay the excess to the Government upon demand, together with interest computed at the rate established by the Secretary of the Treasury under 50 U.S.C. App. 1215(b)(2). Interest shall be computed for the period from the date the excess payment is received by the Contractor to the date the excess is repaid. Interest shall not be charged on any excess payment due to a reduction in the Contractor's termination settlement proposal because of retention or other disposition of

termination inventory until 10 days after the date of the retention or disposition, or a later date determined by the Contracting Officer because of the circumstances.

(n) Unless otherwise provided in this contract or by statute, the Contractor shall maintain all records and documents relating to the terminated portion of this contract for 3 years after final settlement. This includes all books and other evidence bearing on the Contractor's costs and expenses under this contract. The Contractor shall make these records and documents available to the Government, at the Contractor's office, at all reasonable times, without any direct charge. If approved by the Contracting Officer, photographs, microphotographs, or other authentic reproductions may be maintained instead of original records and documents.

(End of clause)

52.249-10 DEFAULT (FIXED-PRICE CONSTRUCTION) (APR 1984)

(a) If the Contractor refuses or fails to prosecute the work or any separable part, with the diligence that will insure its completion within the time specified in this contract including any extension, or fails to complete the work within this time, the Government may, by written notice to the Contractor, terminate the right to proceed with the work (or the separable part of the work) that has been delayed. In this event, the Government may take over the work and complete it by contract or otherwise, and may take possession of and use any materials, appliances, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the Government resulting from the Contractor's refusal or failure to complete the work within the specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the Government in completing the work.

(b) The Contractor's right to proceed shall not be terminated nor the Contractor charged with damages under this clause, if--

(1) The delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include

(i) acts of God or of the public enemy,

(ii) acts of the Government in either its sovereign or contractual capacity,

(iii) acts of another Contractor in the performance of a contract with the Government,

(iv) fires,

(v) floods,

(vi) epidemics,

(vii) quarantine restrictions,

(viii) strikes,

(ix) freight embargoes,

(x) unusually severe weather, or delays of subcontractors or suppliers at any tier arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and the subcontractors or suppliers; and

(2) The Contractor, within 10 days from the beginning of any delay (unless extended by the Contracting Officer), notifies the Contracting Officer in writing of the causes of delay. The Contracting Officer shall ascertain the facts and the extent of delay. If, in the judgment of the Contracting Officer, the findings of fact warrant such action, the time for completing the work shall be extended. The findings of the Contracting Officer shall be final and conclusive on the parties, but subject to appeal under the Disputes clause.

(c) If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been issued for the convenience of the Government.

The rights and remedies of the Government in this clause are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

52.253-1 COMPUTER GENERATED FORMS (JAN 1991)

(a) Any data required to be submitted on a Standard or Optional Form prescribed by the Federal Acquisition Regulation (FAR) may be submitted on a computer generated version of the form, provided there is no change to the name, content, or sequence of the data elements on the form, and provided the form carries the Standard or Optional Form number and edition date.

(b) Unless prohibited by agency regulations, any data required to be submitted on an agency unique form prescribed by an agency supplement to the FAR may be submitted on a computer generated version of the form provided there is no change to the name, content, or sequence of the data elements on the form and provided the form carries the agency form number and edition date.

(g) If the Contractor submits a computer generated version of a form that is different than the required form, then the rights and obligations of the parties will be determined based on the content of the required form.

(End of clause)

252.201-7000 CONTRACTING OFFICER'S REPRESENTATIVE (DEC 1991)

(a) "Definition. Contracting officer's representative" means an individual designated in accordance with subsection 201.602-2 of the Defense Federal Acquisition Regulation Supplement and authorized in writing by the contracting officer to perform specific technical or administrative functions.

(b) If the Contracting Officer designates a contracting officer's representative (COR), the Contractor will receive a copy of the written designation. It will specify the extent of the COR's authority to act on behalf of the contracting officer. The COR is not authorized to make any commitments or changes that will affect price, quality, quantity, delivery, or any other term or condition of the contract.

(End of clause)

252.203-7001 PROHIBITION ON PERSONS CONVICTED OF FRAUD OR OTHER DEFENSE-CONTRACT-RELATED FELONIES (MAR 1999)

(a) Definitions. As used in this clause—

(1) “Arising out of a contract with the DoD” means any act in connection with—

(i) Attempting to obtain;

(ii) Obtaining, or

(iii) Performing a contract or first-tier subcontract of any agency, department, or component of the Department of Defense (DoD).

(2) “Conviction of fraud or any other felony” means any conviction for fraud or a felony in violation of state or Federal criminal statutes, whether entered on a verdict or plea, including a plea of *nolo contendere*, for which sentence has been imposed.

(3) “Date of conviction” means the date judgment was entered against the individual.

(b) Any individual who is convicted after September 29, 1988, of fraud or any other felony arising out of a contract with the DoD is prohibited from serving--

(1) In a management or supervisory capacity on any DoD contract or first-tier subcontract;

(2) On the board of directors of any DoD contractor or first-tier subcontractor;

(3) As a consultant, agent, or representative for any DoD contractor or first-tier subcontractor; or

(4) In any other capacity with the authority to influence, advise, or control the decisions of any DoD contractor or subcontractor with regard to any DoD contract or first-tier subcontract.

(c) Unless waived, the prohibition in paragraph (b) of this clause applies for not less than 5 years from the date of conviction.

(d) 10 U.S.C. 2408 provides that a defense contractor or first-tier subcontractor shall be subject to a criminal penalty of not more than \$500,000 if convicted of knowingly—

(1) Employing a person under a prohibition specified in paragraph (b) of this clause; or

(2) Allowing such a person to serve on the board of directors of the contractor or first-tier subcontractor.

(e) In addition to the criminal penalties contained in 10 U.S.C. 2408, the Government may consider other available remedies, such as—

(1) Suspension or debarment;

(2) Cancellation of the contract at no cost to the Government; or

(3) Termination of the contract for default.

(f) The Contractor may submit written requests for waiver of the prohibition in paragraph (b) of this clause to the Contracting Officer. Requests shall clearly identify—

(1) The person involved;

(2) The nature of the conviction and resultant sentence or punishment imposed;

(3) The reasons for the requested waiver; and

(4) An explanation of why a waiver is in the interest of national security.

(g) The Contractor agrees to include the substance of this clause, appropriately modified to reflect the identity and relationship of the parties, in all first-tier subcontracts exceeding the simplified acquisition threshold in Part 2 of the Federal Acquisition Regulation, except those for commercial items or components.

(h) Pursuant to 10 U.S.C. 2408(c), defense contractors and subcontractors may obtain information as to whether a particular person has been convicted of fraud or any other felony arising out of a contract with the DoD by contacting The Office of Justice Programs, The Denial of Federal Benefits Office, U.S. Department of Justice, telephone (202) 616-3507.

(End of clause)

252.204-7003 CONTROL OF GOVERNMENT PERSONNEL WORK PRODUCT (APR 1992)

The Contractor's procedures for protecting against unauthorized disclosure of information shall not require Department of Defense employees or members of the Armed Forces to relinquish control of their work products, whether classified or not, to the contractor.

(End of clause)

252.204-7004 REQUIRED CENTRAL CONTRACTOR REGISTRATION (NOV 2001)

(a) Definitions.

As used in this clause--

(1) Central Contractor Registration (CCR) database means the primary DoD repository for contractor information required for the conduct of business with DoD.

(2) Data Universal Numbering System (DUNS) number means the 9-digit number assigned by Dun and Bradstreet Information Services to identify unique business entities.

(3) Data Universal Numbering System +4 (DUNS+4) number means the DUNS number assigned by Dun and Bradstreet plus a 4-digit suffix that may be assigned by a parent (controlling) business concern. This 4-digit suffix may be assigned at the discretion of the parent business concern for such purposes as identifying subunits or affiliates of the parent business concern.

(4) Registered in the CCR database means that all mandatory information, including the DUNS number or the DUNS+4 number, if applicable, and the corresponding Commercial and Government Entity (CAGE) code, is in the CCR database; the DUNS number and the CAGE code have been validated; and all edits have been successfully completed.

(b)(1) By submission of an offer, the offeror acknowledges the requirement that a prospective awardee must be registered in the CCR database prior to award, during performance, and through final payment of any contract resulting from this solicitation, except for awards to foreign vendors for work to be performed outside the United States.

(2) The offeror shall provide its DUNS or, if applicable, its DUNS+4 number with its offer, which will be used by the Contracting Officer to verify that the offeror is registered in the CCR database.

(3) Lack of registration in the CCR database will make an offeror ineligible for award.

(4) DoD has established a goal of registering an applicant in the CCR database within 48 hours after receipt of a complete and accurate application via the Internet. However, registration of an applicant submitting an application through a method other than the Internet may take up to 30 days. Therefore, offerors that are not registered should consider applying for registration immediately upon receipt of this solicitation.

(c) The Contractor is responsible for the accuracy and completeness of the data within the CCR, and for any liability resulting from the Government's reliance on inaccurate or incomplete data. To remain registered in the CCR database after the initial registration, the Contractor is required to confirm on an annual basis that its information in the CCR database is accurate and complete.

(d) Offerors and contractors may obtain information on registration and annual confirmation requirements by calling 1-888-227-2423, or via the Internet at <http://www.ccr.gov>.

(End of clause)

252.205-7000 PROVISION OF INFORMATION TO COOPERATIVE AGREEMENT HOLDERS (DEC 1991)

(a) Definition.

"Cooperative agreement holder" means a State or local government; a private, nonprofit organization; a tribal organization (as defined in section 4(c) of the Indian Self-Determination and Education Assistance Act (Pub. L. 93-268; 25 U.S.C. 450 (c))); or an economic enterprise (as defined in section 3(e) of the Indian Financing Act of 1974 (Pub. L. 93-362; 25 U.S.C. 1452(e))) whether such economic enterprise is organized for profit or nonprofit purposes; which has an agreement with the Defense Logistics Agency to furnish procurement technical assistance to business entities.

(b) The Contractor shall provide cooperative agreement holders, upon their request, with a list of those appropriate employees or offices responsible for entering into subcontracts under defense contracts. The list shall include the business address, telephone number, and area of responsibility of each employee or office.

(c) The Contractor need not provide the listing to a particular cooperative agreement holder more frequently than once a year.

(End of clause)

252.209-7000 ACQUISITION FROM SUBCONTRACTORS SUBJECT TO ONSITE INSPECTION UNDER THE INTERMEDIATE-RANGE NUCLEAR FORCES (INF) TREATY (NOV 1995)

(a) The Contractor shall not deny consideration for a subcontract award under this contract to a potential subcontractor subject to on-site inspection under the INF Treaty, or a similar treaty, solely or in part because of the actual or potential presence of Soviet inspectors at the subcontractor's facility, unless the decision is approved by the Contracting Officer.

(b) The Contractor shall incorporate this clause, including this paragraph (b), in all solicitations and contracts exceeding the simplified acquisition threshold in part 13 of the Federal Acquisition Regulation, except those for commercial items.

(End of clause)

252.209-7004 SUBCONTRACTING WITH FIRMS THAT ARE OWNED OR CONTROLLED BY THE GOVERNMENT OF A TERRORIST COUNTRY (MAR 1998)

(a) Unless the Government determines that there is a compelling reason to do so, the Contractor shall not enter into any subcontract in excess of \$25,000 with a firm, or subsidiary of a firm, that is identified, on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs, as being ineligible for the award of Defense contracts or subcontracts because it is owned or controlled by the government of a terrorist country.

(b) A corporate officer or a designee of the Contractor shall notify the Contracting Officer, in writing, before entering into a subcontract with a party that is identified, on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs, as being ineligible for the award of Defense contracts or subcontracts because it is owned or controlled by the government of a terrorist country. The notice must include the name of the proposed subcontractor notwithstanding its inclusion on the List of Parties Excluded From Federal Procurement and Nonprocurement Programs.

(End of clause)

252.215-7000 PRICING ADJUSTMENTS (DEC 1991)

The term "pricing adjustment," as used in paragraph (a) of the clauses entitled "Price Reduction for Defective Cost or Pricing Data - Modifications," "Subcontractor Cost or Pricing Data," and "Subcontractor Cost or Pricing Data - Modifications," means the aggregate increases and/or decreases in cost plus applicable profits.

(End of clause)

252.219-7011 NOTIFICATION TO DELAY PERFORMANCE (JUN 1998)

The Contractor shall not begin performance under this purchase order until 2 working days have passed from the date of its receipt. Unless the Contractor receives notification from the Small Business Administration that it is ineligible for this 8(a) award, or otherwise receives instructions from the Contracting Officer, performance under this purchase order may begin on the third working day following receipt of the purchase order. If a determination of ineligibility is issued within the 2-day period, the purchase order shall be considered canceled.

(End of clause)

252.225-7012 PREFERENCE FOR CERTAIN DOMESTIC COMMODITIES (FEB 2003)

(a) Definitions. As used in this clause--

(1) Component means any item supplied to the Government as part of an end product or of another component.

(2) End product means supplies delivered under a line item of this contract.

(b) The Contractor shall deliver under this contract only such of the following items, either as end products or components, that have been grown, reprocessed, reused, or produced in the United States, its possessions, or Puerto Rico:

- (1) Food.
- (2) Clothing.
- (3) Tents, tarpaulins, or covers.
- (4) Cotton and other natural fiber products.
- (5) Woven silk or woven silk blends.
- (6) Spun silk yarn for cartridge cloth.
- (7) Synthetic fabric, and coated synthetic fabric, including all textile fibers and yarns that are for use in such fabrics.
- (8) Canvas products.
- (9) Wool (whether in the form of fiber or yarn or contained in fabrics, materials, or manufactured articles).
- (10) Any item of individual equipment (Federal Supply Class 8465) manufactured from or containing fibers, yarns, fabrics, or materials listed in this paragraph (b).

(c) This clause does not apply --

(1) To items listed in section 25.104(a) of the Federal Acquisition Regulation (FAR), or other items for which the Government has determined that a satisfactory quality and sufficient quantity cannot be acquired as and when needed at U.S. market prices;

(2) To end products incidentally incorporating cotton, other natural fibers, or wool, for which the estimated value of the cotton, other natural fibers, or wool--

(i) Is not more than 10 percent of the total price of the end product; and (ii) Does not exceed the simplified acquisition threshold in FAR part 2;

(3) To foods that have been manufactured or processed in the United States, its possessions, or Puerto Rico, regardless of where the foods (and any component if applicable) were grown or produced, except that this clause does apply to fish, shellfish, or seafood manufactured or processed in the United States and fish, shellfish, or seafood contained in foods manufactured or processed in the United States;

(4) To chemical warfare protective clothing produced in the countries listed in subsection 225.872-1 of the Defense FAR Supplement; or

(5) To fibers and yarns that are for use in synthetic fabric or coated synthetic fabric (but does apply to the synthetic or coated synthetic fabric itself), if--

(i) The fabric is to be used as a component of an end product that is not a textile product. Examples of textile products, made in whole or in part of fabric, include--

(A) Draperies, floor coverings, furnishings, and bedding (Federal Supply Group 72, Household and Commercial Furnishings and Appliances);

(B) Items made in whole or in part of fabric in Federal Supply Group 83, Textile/leather/furs/apparel/findings/tents/flags, or Federal Supply Group 84, Clothing, Individual Equipment and Insignia;

(C) Upholstered seats (whether for household, office, or other use); and

(D) Parachutes (Federal Supply Class 1670); or

(ii) The fibers and yarns are para-aramid fibers and yarns manufactured in the Netherlands.

(End of clause)

252.225-7031 SECONDARY ARAB BOYCOTT OF ISRAEL (JUN 1992)

(a) Definitions. As used in this clause--

(1) "Foreign person" means any person other than a United States person as defined in Section 16(2) of the Export Administration Act of 1979 (50 U.S.C. App. Sec 2415).

(2) "United States person" is defined in Section 16(2) of the Export Administration Act of 1979 and means any United States resident or national (other than an individual resident outside the United States and employed by other than a United States person), any domestic concern (including any permanent domestic establishment of any foreign concern), and any foreign subsidiary or affiliate (including any permanent foreign establishment) of any domestic concern which is controlled in fact by such domestic concerns, as determined under regulations of the President.

(b) Certification. By submitting this offer, the Offeror, if a foreign person, company or entity, certifies that it--

(1) Does not comply with the Secondary Arab Boycott of Israel; and

(2) Is not taking or knowingly agreeing to take any action, with respect to the Secondary Boycott of Israel by Arab countries, which 50 U.S.C. App. Sec 2407(a) prohibits a United States person from taking.

(End of clause)

252.227-7033 RIGHTS IN SHOP DRAWINGS (APR 1966)

(a) Shop drawings for construction means drawings, submitted to the Government by the Construction Contractor, subcontractor or any lower-tier subcontractor pursuant to a construction contract, showing in detail (i) the proposed fabrication and assembly of structural elements and (ii) the installation (i.e., form, fit, and attachment details) of materials or equipment. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

(b) This clause, including this paragraph (b), shall be included in all subcontracts hereunder at any tier.

252.231-7000 SUPPLEMENTAL COST PRINCIPLES (DEC 1991)

When the allowability of costs under this contract is determined in accordance with part 31 of the Federal Acquisition Regulation (FAR), allowability shall also be determined in accordance with part 231 of the Defense FAR Supplement, in effect on the date of this contract.

(End of clause)

252.232-7003 ELECTRONIC SUBMISSION OF PAYMENT REQUESTS (MAR 2003)

(a) Definitions. As used in this clause--

(1) Contract financing payment and invoice payment have the meanings given in section 32.001 of the Federal Acquisition Regulation.

(2) Electronic form means any automated system that transmits information electronically from the initiating system to all affected systems. Facsimile, e-mail, and scanned documents are not acceptable electronic forms.

(3) Payment request means any request for contract financing payment or invoice payment submitted by the Contractor under this contract.

(b) Except as provided in paragraph (c) of this clause, the Contractor shall submit payment requests using one of the following electronic forms:

(1) Wide Area WorkFlow-Receipt and Acceptance (WAWF-RA). Information regarding WAWF-RA is available on the Internet at <https://rmb.ogden.disa.mil>.

(2) Web Invoicing System (WInS). Information regarding WInS is available on the Internet at <https://ecweb.dfas.mil>.

(3) American National Standards Institute (ANSI) X.12 electronic data interchange (EDI) formats.

(i) Information regarding EDI formats is available on the Internet at <http://www.X12.org>.

(ii) EDI implementation guides are available on the Internet at <http://www.dfas.mil/ecedi>.

(4) Another electronic form authorized by the Contracting Officer.

(c) If the Contractor is unable to submit a payment request in electronic form, or DoD is unable to receive a payment request in electronic form, the Contractor shall submit the payment request using a method mutually agreed to by the Contractor, the Contracting Officer, and the payment office.

(d) In addition to the requirements of this clause, the Contractor shall meet the requirements of the appropriate payment clauses in this contract when submitting payments requests.

(End of clause)

252.236-7000 MODIFICATION PROPOSALS - PRICE BREAKDOWN. (DEC 1991)

(a) The Contractor shall furnish a price breakdown, itemized as required and within the time specified by the Contracting Officer, with any proposal for a contract modification.

(b) The price breakdown --

(1) Must include sufficient detail to permit an analysis of profit, and of all costs for --

(i) Material;

(ii) Labor;

(iii) Equipment;

(iv) Subcontracts; and

(v) Overhead; and

(2) Must cover all work involved in the modification, whether the work was deleted, added, or changed.

(c) The Contractor shall provide similar price breakdowns to support any amounts claimed for subcontracts.

(d) The Contractor's proposal shall include a justification for any time extension proposed.

(End of clause)

252.236-7001 CONTRACT DRAWINGS, MAPS, AND SPECIFICATIONS (AUG 2000)

(a) The Government will provide to the Contractor, without charge, one set of contract drawings and specifications, except publications incorporated into the technical provisions by reference, in electronic or paper media as chosen by the Contracting Officer.

(b) The Contractor shall--

(1) Check all drawings furnished immediately upon receipt;

(2) Compare all drawings and verify the figures before laying out the work;

(3) Promptly notify the Contracting Officer of any discrepancies;

(4) Be responsible for any errors that might have been avoided by complying with this paragraph (b); and

(5) Reproduce and print contract drawings and specifications as needed.

(c) In general--

(1) Large-scale drawings shall govern small-scale drawings; and

(2) The Contractor shall follow figures marked on drawings in preference to scale measurements.

(d) Omissions from the drawings or specifications or the misdescription of details of work that are manifestly necessary to carry out the intent of the drawings and specifications, or that are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed details of the work. The Contractor shall perform such details as if fully and correctly set forth and described in the drawings and specifications.

(e) The work shall conform to the specifications and the contract drawings identified on the following index of drawings:

INDEX OF DRAWINGS AND ABBREVIATIONS; BMRL-7/G-1

(End of clause)

252.236-7004 PAYMENT FOR MOBILIZATION AND DEMOBILIZATION (DEC 1991)

(a) The Government will pay all costs for the mobilization and demobilization of all of the Contractor's plant and

equipment at the contract lump sum price for this item.

(1) **Sixty percent (60%)** of the lump sum price upon completion of the contractor's mobilization at the work site.

(2) The remaining **forty percent (40%)** upon completion of demobilization.

(b) The Contracting Officer may require the Contractor to furnish cost data to justify this portion of the bid if the Contracting Officer believes that the percentages in paragraphs (a) (1) and (2) of this clause do not bear a reasonable relation to the cost of the work in this contract.

(1) Failure to justify such price to the satisfaction of the Contracting Officer will result in payment, as determined by the Contracting Officer, of --

(i) Actual mobilization costs at completion of mobilization;

(ii) Actual demobilization costs at completion of demobilization; and

(iii) The remainder of this item in the final payment under this contract.

(2) The Contracting Officer's determination of the actual costs in paragraph (b)(1) of this clause is not subject to appeal.

(End of clause)

252.236-7006 COST LIMITATION (JAN 1997)

(a) Certain items in this solicitation are subject to statutory cost limitations. The limitations are stated in the Schedule.

(b) An offer which does not state separate prices for the items identified in the Schedule as subject to a cost limitation may be considered nonresponsive.

(c) Prices stated in offers for items subject to cost limitations shall include an appropriate apportionment of all costs, direct and indirect, overhead, and profit.

(d) Offers may be rejected which--

(1) Are materially unbalanced for the purpose of bringing items within cost limitations; or

(2) Exceed the cost limitations, unless the limitations have been waived by the Government prior to award.

(End of clause)

252.236-7008 CONTRACT PRICES - BIDDING SCHEDULES. (DEC 1991)

(a) The Government's payment for the items listed in the Bidding Schedule shall constitute full compensation to the Contractor for --

(1) Furnishing all plant, labor, equipment, appliances, and materials; and

(2) Performing all operations required to complete the work in conformity with the drawings and specifications.

(b) The Contractor shall include in the prices for the items listed in the Bidding Schedule all costs for work in the specifications, whether or not specifically listed in the Bidding Schedule.

(End of clause)

252.242-7000 POSTAWARD CONFERENCE (DEC 1991)

The Contractor agrees to attend any postaward conference convened by the contracting activity or contract administration office in accordance with Federal Acquisition Regulation subpart 42.5.

(End of clause)

252.243-7001 PRICING OF CONTRACT MODIFICATIONS (DEC 1991)

When costs are a factor in any price adjustment under this contract, the contract cost principles and procedures in FAR part 31 and DFARS part 231, in effect on the date of this contract, apply.

(End of clause)

252.243-7002 REQUESTS FOR EQUITABLE ADJUSTMENT (MAR 1998)

(a) The amount of any request for equitable adjustment to contract terms shall accurately reflect the contract adjustment for which the Contractor believes the Government is liable. The request shall include only costs for performing the change, and shall not include any costs that already have been reimbursed or that have been separately claimed. All indirect costs included in the request shall be properly allocable to the change in accordance with applicable acquisition regulations.

(b) In accordance with 10 U.S.C. 2410(a), any request for equitable adjustment to contract terms that exceeds the simplified acquisition threshold shall bear, at the time of submission, the following certificate executed by an individual authorized to certify the request on behalf of the Contractor:

I certify that the request is made in good faith, and that the supporting data are accurate and complete to the best of my knowledge and belief.

(Official's Name)

(Title)

(c) The certification in paragraph (b) of this clause requires full disclosure of all relevant facts, including--

(1) Cost or pricing data if required in accordance with subsection 15.403-4 of the Federal Acquisition Regulation (FAR); and

(2) Information other than cost or pricing data, in accordance with subsection 15.403-3 of the FAR, including actual cost data and data to support any estimated costs, even if cost or pricing data are not required.

(d) The certification requirement in paragraph (b) of this clause does not apply to----

- (1) Requests for routine contract payments; for example, requests for payment for accepted supplies and services, routine vouchers under a cost-reimbursement type contract, or progress payment invoices; or
- (2) Final adjustment under an incentive provision of the contract.

(End of clause)

252.244-7000 SUBCONTRACTS FOR COMMERCIAL ITEMS AND COMMERCIAL COMPONENTS (DOD) (MAR 2000)

In addition to the clauses listed in paragraph (c) of the Subcontracts for Commercial Items and Commercial Components clause of this contract (Federal Acquisition Regulation 52.244-6), the Contractor shall include the terms of the following clauses, if applicable, in subcontracts for commercial items or commercial components, awarded at any tier under this contract:

252.225-7014 Preference for Domestic Specialty Metals, Alternate I (10 U.S.C. 2241 note).

252.247-7023 Transportation of Supplies by Sea (10 U.S.C. 2631).

252.247-7024 Notification of Transportation of Supplies by Sea (10 U.S.C. 2631).

(End of clause)

252.246-7000 MATERIAL INSPECTION AND RECEIVING REPORT (MAR 2003)

(a) At the time of each delivery of supplies or services under this contract, the Contractor shall prepare and furnish to the Government a material inspection and receiving report in the manner and to the extent required by Appendix F, Material Inspection and Receiving Report, of the Defense FAR Supplement.

(b) Contractor submission of the material inspection and receiving information required by Appendix F of the Defense FAR Supplement by using the Wide Area WorkFlow-Receipt and Acceptance (WAWF-RA) electronic form (see paragraph (b)(1) of the clause at 252.232-7003) fulfills the requirement for a material inspection and receiving report (DD Form 250).

(End of clause)

252.247-7023 TRANSPORTATION OF SUPPLIES BY SEA (MAY 2002)

(a) Definitions. As used in this clause --

- (1) "Components" means articles, materials, and supplies incorporated directly into end products at any level of manufacture, fabrication, or assembly by the Contractor or any subcontractor.
- (2) "Department of Defense" (DoD) means the Army, Navy, Air Force, Marine Corps, and defense agencies.
- (3) "Foreign flag vessel" means any vessel that is not a U.S.-flag vessel.
- (4) "Ocean transportation" means any transportation aboard a ship, vessel, boat, barge, or ferry through international waters.
- (5) "Subcontractor" means a supplier, materialman, distributor, or vendor at any level below the prime contractor

whose contractual obligation to perform results from, or is conditioned upon, award of the prime contract and who is performing any part of the work or other requirement of the prime contract.

(6) "Supplies" means all property, except land and interests in land, that is clearly identifiable for eventual use by or owned by the DoD at the time of transportation by sea.

(i) An item is clearly identifiable for eventual use by the DoD if, for example, the contract documentation contains a reference to a DoD contract number or a military destination.

(ii) "Supplies" includes (but is not limited to) public works; buildings and facilities; ships; floating equipment and vessels of every character, type, and description, with parts, subassemblies, accessories, and equipment; machine tools; material; equipment; stores of all kinds; end items; construction materials; and components of the foregoing.

(7) "U.S.-flag vessel" means a vessel of the United States or belonging to the United States, including any vessel registered or having national status under the laws of the United States.

(b)(1) The Contractor shall use U.S.-flag vessels when transporting any supplies by sea under this contract.

(2) A subcontractor transporting supplies by sea under this contract shall use U.S.-flag vessels if--

(i) This contract is a construction contract; or

(ii) The supplies being transported are--

(A) Noncommercial items; or

(B) Commercial items that--

(1) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it contracts for f.o.b. destination shipment);

(2) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or

(3) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.

(c) The Contractor and its subcontractors may request that the Contracting Officer authorize shipment in foreign-flag vessels, or designate available U.S.-flag vessels, if the Contractor or a subcontractor believes that --

(1) U.S.-flag vessels are not available for timely shipment;

(2) The freight charges are inordinately excessive or unreasonable; or

(3) Freight charges are higher than charges to private persons for transportation of like goods.

(d) The Contractor must submit any request for use of other than U.S.-flag vessels in writing to the Contracting Officer at least 45 days prior to the sailing date necessary to meet its delivery schedules. The Contracting Officer will process requests submitted after such date(s) as expeditiously as possible, but the Contracting Officer's failure to grant approvals to meet the shipper's sailing date will not of itself constitute a compensable delay under this or any other clause of this contract. Requests shall contain at a minimum --

(1) Type, weight, and cube of cargo;

(2) Required shipping date;

(3) Special handling and discharge requirements;

(4) Loading and discharge points;

(5) Name of shipper and consignee;

(6) Prime contract number; and

(7) A documented description of efforts made to secure U.S.-flag vessels, including points of contact (with names and telephone numbers) with at least two U.S.-flag carriers contacted. Copies of telephone notes, telegraphic and facsimile message or letters will be sufficient for this purpose.

(e) The Contractor shall, within 30 days after each shipment covered by this clause, provide the Contracting Officer and the Maritime Administration, Office of Cargo Preference, U.S. Department of Transportation, 400 Seventh Street SW., Washington, DC 20590, one copy of the rated on board vessel operating carrier's ocean bill of lading, which shall contain the following information:

(1) Prime contract number;

(2) Name of vessel;

(3) Vessel flag of registry;

(4) Date of loading;

(5) Port of loading;

(6) Port of final discharge;

(7) Description of commodity;

(8) Gross weight in pounds and cubic feet if available;

(9) Total ocean freight in U.S. dollars; and

(10) Name of the steamship company.

(f) The Contractor shall provide with its final invoice under this contract a representation that to the best of its knowledge and belief--

(1) No ocean transportation was used in the performance of this contract;

(2) Ocean transportation was used and only U.S.-flag vessels were used for all ocean shipments under the contract;

(3) Ocean transportation was used, and the Contractor had the written consent of the Contracting Officer for all non-U.S.-flag ocean transportation; or

(4) Ocean transportation was used and some or all of the shipments were made on non-U.S.-flag vessels without the written consent of the Contracting Officer. The Contractor shall describe these shipments in the following format:

ITEM DESCRIPTION	CONTRACT LINE ITEMS	QUANTITY
-----	-----	-----
-----	-----	-----
-----	-----	-----
TOTAL	-----	-----

(g) If the final invoice does not include the required representation, the Government will reject and return it to the Contractor as an improper invoice for the purposes of the Prompt Payment clause of this contract. In the event there has been unauthorized use of non-U.S.-flag vessels in the performance of this contract, the Contracting Officer is entitled to equitably adjust the contract, based on the unauthorized use.

(h) In the award of subcontracts for the types of supplies described in paragraph (b)(2) of this clause, the Contractor shall flow down the requirements of this clause as follows:

(1) The Contractor shall insert the substance of this clause, including this paragraph (h), in subcontracts that exceed the simplified acquisition threshold in part 2 of the Federal Acquisition Regulation.

(2) The Contractor shall insert the substance of paragraphs (a) through (e) of this clause, and this paragraph (h), in subcontracts that are at or below the simplified acquisition threshold in part 2 of the Federal Acquisition Regulation.

(End of clause)

252.247-7024 NOTIFICATION OF TRANSPORTATION OF SUPPLIES BY SEA (MAR 2000)

(a) The Contractor has indicated by the response to the solicitation provision, Representation of Extent of Transportation by Sea, that it did not anticipate transporting by sea any supplies. If, however, after the award of this contract, the Contractor learns that supplies, as defined in the Transportation of Supplies by Sea clause of this contract, will be transported by sea, the Contractor --

(1) Shall notify the Contracting Officer of that fact; and

(2) Hereby agrees to comply with all the terms and conditions of the Transportation of Supplies by Sea clause of this contract.

(b) The Contractor shall include this clause; including this paragraph (b), revised as necessary to reflect the relationship of the contracting parties--

(1) In all subcontracts under this contract, if this contract is a construction contract; or

(2) If this contract is not a construction contract, in all subcontracts under this contract that are for--

(i) Noncommercial items; or

(ii) Commercial items that--

(A) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it subcontracts for f.o.b. destination shipment);

(B) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or

(C) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.

(End of clause)

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WAGE DETERMINATION**General Decision Number IL020016**General Decision Number **IL020016**

Superseded General Decision No. IL010016

State: **Illinois**

Construction Type:

HEAVY

HIGHWAY

County(ies):

ALEXANDER	JACKSON	RANDOLPH
CLAY	JASPER	RICHLAND
CRAWFORD	JEFFERSON	SALINE
EDWARDS	JOHNSON	UNION
EFFINGHAM	LAWRENCE	WABASH
FAYETTE	MARION	WAYNE
FRANKLIN	MASSAC	WHITE
GALLATIN	PERRY	WILLIAMSON
HAMILTON	POPE	
HARDIN	PULASKI	

HEAVY CONSTRUCTION PROJECTS (including Sewer & Water Line Construction & Drainage Projects) & HIGHWAY CONSTRUCTION PROJECT (excluding tunnels, building structures in rest areas projects, and railroad construction; bascule, suspension & spandrel arch bridges; bridges designed for commercial navigation; bridges involving marine construction, other major bridges)

Modification Number Publication Date

0	03/01/2002
1	03/08/2002
2	03/15/2002
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5	06/07/2002
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8	08/09/2002
9	08/16/2002
10	10/04/2002
11	01/03/2003
12	01/10/2003
13	01/17/2003
14	01/31/2003
15	03/07/2003
16	03/14/2003
17	04/11/2003
18	04/18/2003

COUNTY(ies):

ALEXANDER	JACKSON	RANDOLPH
CLAY	JASPER	RICHLAND
CRAWFORD	JEFFERSON	SALINE
EDWARDS	JOHNSON	UNION

EFFINGHAM	LAWRENCE	WABASH
FAYETTE	MARION	WAYNE
FRANKLIN	MASSAC	WHITE
GALLATIN	PERRY	WILLIAMSON
HAMILTON	POPE	
HARDIN	PULASKI	

CARP0347G 08/01/2002

	Rates	Fringes
CRAWFORD, EFFINGHAM & JASPER COUNTIES:		
CARPENTERS	23.17	8.66
MILLWRIGHTS	19.23	5.99
PILEDRIVERMEN	23.67	8.66

CARP0634B 08/01/2002

	Rates	Fringes
CLAY, EDWARDS, FAYETTE, LAWRENCE, MARION, RICHLAND, & WABASH COUNTIES:		
CARPENTERS	22.19	9.64
MILLWRIGHTS & PILEDRIVERS	22.69	9.64

CARP0636A 08/01/2002

	Rates	Fringes
HAMILTON, JEFFERSON, WAYNE, & WHITE COUNTIES:		
CARPENTERS	22.19	9.64
PILEDRIVERMEN & MILLWRIGHTS	22.69	9.64
DIVERS (receive 1 1/2 times carpenter rate plus fringes and \$25 per day for equipment)		

CARP0640G 08/01/2002

	Rates	Fringes
ALEXANDER, FRANKLIN, HARDIN, MASSAC, JACKSON, PERRY, POPE, JOHNSON, GALLATIN, PULASKI, SALINE, UNION, & WILLIAMSON COUNTIES		
CARPENTERS	21.76	10.07
DIVERS (Receive 1 1/2 times Carpenter's rate plus fringe benefits and \$25.00 per day for equipment)		

CARP1361A 08/01/2002

	Rates	Fringes
RANDOLPH COUNTY		
CARPENTERS, PILEDRIVERMEN, AND MILLWRIGHTS	24.56	9.96
DIVERS (receive 1 1/2 times carpenter rate plus fringes and \$25 per day for equipment)		

ELEC0016B 04/01/2002

	Rates	Fringes
WABASH COUNTY		
ELECTRICIANS	25.86	9.79

ELEC0051E 03/01/1998

	Rates	Fringes
FAYETTE COUNTY (North of Avena, Bear Grove, Sefton, and Sharon TWPS)		
LINE CONSTRUCTION:		
Lineman	24.96	2.00+24.75%
Equipment Operator (All crawler type equipment larger than D-4, 15 ton crane or larger)	23.20	2.00+24.75%
Groundman-Truck Driver w/winch, may operate diggers, 5th wheel type trucks, crawler-type equipment, D-4 & smaller backhoe 3/4 yard & under, & may drive bucket truck & live boom type line trucks)	17.50	2.00+24.75%
Groundman-Truck Driver w/o winch	16.45	2.00+24.75%
Groundman	15.63	2.00+24.75%

ELEC0146D 12/01/2000

	Rates	Fringes
EFFINGHAM (Banner, Bishop, Douglas, Liberty, Lucas, Moccasin, St. Francis, Summit, & Teulopolis TWPS), & FAYETTE (Hurricane, S. Hurricane, Ramsey, Bowling Green, Carson, & Loudon TWPS) COUNTIES:		
ELECTRICIANS	25.45	6.43+3%

ELEC0309D 12/01/1997

	Rates	Fringes
RANDOLPH COUNTY (Red Bud Twp)		
ELECTRICIANS	26.51	41.5%

ELEC0309I 11/29/1999

	Rates	Fringes
RANDOLPH (Red Bud Township) COUNTY:		
LINE CONSTRUCTION:		
Lineman	28.21	41.82%
Groundman Equipment Operator	24.55	41.82%
Groundman Truck Driver	20.03	41.82%
Groundman	18.33	41.82%

ELEC0702A 06/01/2002

	Rates	Fringes
ALEXANDER, CLAY, EDWARDS, EFFINGHAM (Excluding Banner, Bishop, Douglas, Liberty, Lucas, Moccasin, St. Francis, Summit and Teulopolis TWPS), FAYETTE (Excluding Hurricane, S. Hurricane, Ramsey, Bowling Green, Carson and Loudon TWPS), FRANKLIN, GALLATIN, HAMILTON, HARDIN, JACKSON, JEFFERSON, JOHNSON, MARION, MASSAC, PERRY, POPE, PULASKI, SALINE, UNION, WAYNE, WHITE, AND WILLIAMSON COUNTIES		
ELECTRICIANS	27.85	3.89+19.5%

ELEC0702B 01/01/2002

	Rates	Fringes
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ALEXANDER, CLAY, CRAWFORD, EDWARDS, EFFINGHAM, FRANKLIN, FAYETTE
(Excludes portion N. Avena), GALLATIN, HAMILTON, HARDIN, JACKSON,
JASPER, JEFFERSON, JOHNSON, LAWRENCE, MARION, MASSAC, PERRY,
POPE, PULASKI, RANDOLPH (Except Red Bud Twps), RICHLAND, SALINE,
UNION, WABASH, WAYNE, WHITE, & WILLIAMSON COUNTIES:

LINE CONSTRUCTION:

Lineman	29.87	2.30+25.5%
Groundman Equipment Operator (All crawler type equipment D-4 and larger)	24.63	2.30+25.5%
Groundman Equipment Operator (All other equipment)	22.02	2.30+25.5%
Groundman	18.20	2.30+25.5%

ELEC0725D 06/01/1993

	Rates	Fringes
CRAWFORD, JASPER, LAWRENCE, & RICHLAND COUNTIES		
ELECTRICIANS	18.77	2.26+3%

ENGI0318A 01/01/2003

	Rates	Fringes
ALEXANDER, FRANKLIN, GALLATIN, HAMILTON, HARDIN, JACKSON, JOHNSON, MASSAC, POPE, PULASKI, SALINE, UNION, WHITE, & WILLIAMSON COUNTIES		

POWER EQUIPMENT OPERATORS:

GROUP 1	24.00	10.13+a
GROUP 2	22.10	10.13+a
GROUP 3	21.35	10.13+a
GROUP 4	20.00	10.13+a

RIVER WORK ONLY:

GROUP 5	24.10	10.13+a
GROUP 6	20.65	10.13+a

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: All Off Road Material Hauling Equipment, All Terrain Crane, Articulated Dump Truck, Asphalt Machine Spreader, Asphalt Plant Operator, Asphalt Widener, Autograder, Automatic Slipform Pavers, Backhoes, Barrel Grappler Devices (All), Blacksmith, Blade Operators (All), Boat Operators (all) Bridges, Dams & Waterways, Boilers, Boom or Winch Cat, Boom or Winch Type Trucks, Boring Machines-Horizontal, Clamshell, Orange Peel Operator, Concrete Breaker, Concrete Groover, Concrete Grinder, Concrete Curb Machine, Concrete Finish Machine or Spreader Operator, Concrete Mixer Paver, Concrete Pump Truck, Concrete Plant Operator, Concrete Wheel Saw Operators, Cranes(All) Truck/Track/Rubber, Crane (Overhead) Operator, Derrick Guy or Derrick Trucks, Ditching Machines (All), Dozer Operators, Dragline or Shovel Operators, Dredge Booster Pump, Dredge Engineman, Dredge Operator/Leverman, Drill Cat w/Compressor Mounted, Drilling or Boring Machine Rotary-Self-Propelled, Endloaders (All) Track/Rubber Elevating Grader, Flexplane, Forklifts (All), Gradall; Greasers, Heavy Equipment Robotics Operator, Hi-Lift, Hoists, Hosting Engine, Horizontal Directional Drill Operator, Incinerators (Haz-Mat only), Laser Screed, Locomotive/Operator,

Master Mechanic, Mixers 21 cu. ft. or over, Motor Patrol, Pile driver operator, Pulls & Scrapers, Power Pac & Controls (Pile Driving), Pug mill, Pulverizer or Tillers, Push Cats, Quad Trac, Rotomills, Rubber Tired Farm Tractor with Attachments over 1/2 yd., Self-Propelled Chip Spreader, Self-Propelled Roller w/Attachments, Short Blaster/Bridge Deck, Shuttle Buggie, Side booms, Skid loader (Skid steers), Skimmer Scoop, Stationary Rock Slinger, Trench Machine Operator, Tuggers, Ultra High Pressure Water Jet Cutting Machine, Vacuum, Vacuum Blasting Machine Operator, Vac Jet, Well or Caisson Drills, Well Point Pumps-2 or more, Wood Chipper w/Tractor

GROUP 2: Air Track Drill/Compressor, All Machines used to Sweep, Clean, Broom or remove debris or snow, Any type tractor pulling Roller or Disc, Asphalt Plant Assistant Operators, Assistant Operators on Rotomills, Automatic Bins or Scales W/Compressor or Generator, Back-End man on Asphalt Machine, Bulk Cement Plant W/Separate Compressor, Concrete Curb Machine requiring Electronics, Concrete Plant Assistant Operators, Concrete or Pumpcrete Pumps, Deck Hand on Boats, Dredge Assistant Operator/Mate, Power Broom, Self-Propelled Roller/Compactor, Straw Mulcher Blower, Stump Cutter Machine, Two Air Compressors (220 CFM or over), Two Air Track Drills

GROUP 3: Air Compressor w/value driving piling, Assistant Operator, Boom or Winch Type Truck, Elevator Operator, Form Grader, Man Lift (Scissor Lift) when lifting materials, Mechanic, Pile driver activating air or hydraulic value, Rubber-Tired Farm Type Tractor w/Blade/Bulldozer/Auger/Hi-Lift of 1/2 yd or less, Self-Propelled Concrete Saw, Self-Propelled Robotics roller, Self-Propelled Vibrator; Truck Crane assistant operator; Two Conveyors

GROUP 4: Air Compressor (220 CFM or over) One, Air Track Drill (one), Automatic Bin, Belt Drag Machine, Bulk Cement Plant w/Built-in Compressor running off same motor or electric motor, Fireman or Switchman, Mechanical plasterer applicator, Pipeline Tract Jack, Power Broom, Self-Propelled Form Taper, Trac-Air, Mixers-less than 21 cu. ft. Mortar Mixer w/ski or pump, Mud Jacks, One Well Point Pump, Wood Chipper

GROUP 5: All Off Road Material Hauling Equipment, All Terrain Crane, All Power Boat Operators, Articulated Dump Truck, Asphalt Machine Spreader, Asphalt Plant Operator, Asphalt Widener, Autograder, Automatic Slipform Pavers, Backhoes, Barrell Grappler Devices (All), Blacksmith, Blade Operators (All), Boat Operators (All) Bridges, Dams & Waterways, Boilers, Boom or Winch Cat, Boom or Winch Type Trucks, Boring Machines-Horizontal, Clamshell, Orange Peel Operator, Concrete Breaker, Concrete Curb Machine, Concrete Finish Machine or Spreader Operator, Concrete Mixer Paver, Concrete Pump Truck, Concrete Plant Operator, Concrete Wheel Saw Operators, Cranes (All) Truck/Track/Rubber, Crane (Overhead) Operator, Derrick Guy or Derrick Trucks, Ditching Machines (All), Dozer Operators, Dragline or Shovel Operators, Dredge Booster Pump, Dredge Engineman, Dredge Operator/Leverman, Drill Cat w/Compressor Mounted, Drilling or Boring Machine Rotary-Self-Propelled, Endloaders (All)Track/Rubber Elevating

Grader; Flexplane, Forklifts (All), Gradell, Greasers, Heavy Equipment Robotics Operator, Hi-Lift, Hoist, Hoisting Engine, Horizontal Directional Drill Operator, Incinerator (Haz-Mat only), Laser-Screed, Locomotive/Operator, Master Mechanic, Mixers 21 cu. ft. or over, Motor Patrol, Piledriver Operator, Pulls & Scrapers, Power Pac & Controls (Pile Driving), Pugmill, Pulverizer or Tillers, Push Cats, Quad Trac, Rotomill, Rubber Tired Farm Tractor with Attachments over 1/2 yd., Self-Propelled Chip Spreader; Self-Propelled Roller w/Attachments, Shuttle Buggy, Sidebooms, Skidloader (Skidsteers), Skimmer Scoop, Trench Machine Operator, Tuggers, Ultra High Pressure Water Jet Cutting Machine, Vacuum, Vacuum Blasting Machine Operator, Vac Jet, Well or Caisson Drills, Well Point Pumps - 2 or more, Wood Chipper w/Tractor

GROUP 6: All Terrain Cherry Picker w/over 40 ton Lifting Capacity, Crane, Deckhand on all rivers, lakes and tributaries, Dinky or Standard Locomotive, Ditching Machine (80 H.P. and over), Dragline, Dredge, Gradall, Guy Derrick, Assistant Operators or Fireman on Crane, Pile Driver, Shovel, Trenching Machine, Truck Crane

Footnote:a-Hazardous Waste Premium:

Level (A)-recieve \$1.00 above rate.

Level (B)-receive \$.75 above rate.

Level (C)-receive \$.50 above rate.

Level (D)-receive \$.25 above rate.

ENGI0520B 08/01/2002

	Rates	Fringes
FAYETTE, JEFFERSON, MARION, PERRY, RANDOLPH COUNTIES		
POWER EQUIPMENT OPERATORS:		
GROUP 1	24.30	13.80
GROUP 2	18.64	13.80
GROUP 3	18.75	13.80
GROUP 4	18.42	13.80
GROUP 5	24.85	13.80
GROUP 6	25.15	13.80
GROUP 7	25.43	13.80

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Cranes; Draglines; Shovels; Skimmer Scoops; Clamshells or Derrick Boats; Piledrivers; Crane type Backhoes; Asphalt Plant Operator; Concrete Plant Operator; Dredges; Asphalt Spreading Machines; Locomotives; Cableways or Tower Machines; Hoists; Hydraulic Backhoes; Ditching Machines or Backfiller; Cherry Pickers; Overhead Crane; Roller; Concrete Paver; Concrete Breakers and Pumps; Bulk Cement Plants; Cement Pumps; Derrick type Drills; Boat Operators; Motor Graders or Pushcats; Scoops or Tournapulls; Bulldozers; End Loaders or Forklifts; Power Blade or Elevating Grader; Winch Cats; Boom or Winch Trucks or Boom Tractor; Pipewrapping or Painting Machines; Drills (other than Derrick type); Mud Jacks; Well Drilling Machines; Mixers; Conveyors (two); Air Compressors two; Water Pumps regardless of size; Welding Machines Two; Siphons or Jets Two; Winch Heads or Apparatus Two; Light Plants Two; Tractors regardless of size

straight (tractor only); Firemen on Stationary Boilers; Automatic Elevators; Form Grading Machines; Finishing Machines; Power Sub-Grader or Ribbon Machine; Longitudinal Floats; Distribution operator on trucks; Winch Heads or apparatuses (1); Excavators; Mobile Track Air and Heater (2 to 5); Heavy Equipment Greaser and all other operators not listed below.

GROUP 2: Air Compressor One; Water Pump regardless of size One; Welding Machine One; 1-Bag Mixer One; Conveyor One; Siphon or Jet; Light Plant One; Heater One; Immobile Track Air One

GROUP 3: Firemen on Whirlies and Asphalt Spreader Oiler; Heavy Equipment Oilers; Truck Cranes; Monigans; Large over 65 tons capacity; Concrete Plant Oiler and Black Top Plant Oiler

GROUP 4: Oilers

GROUP 5: Master Mechanic; Operators on equipment with Booms, including Jibs, 100 ft and over, but less than 150 ft

GROUP 6: Operators on equipment with Booms, including Jibs, 150 ft and over, but less than 200 ft

GROUP 7: Operators on equipment with Boomns, including Jibs, 200 ft and over; Tower Cranes, and Whirley Cranes

 ENGI0841E 04/01/2002

	Rates	Fringes
CLAY, CRAWFORD, EDWARDS, EFFINGHAM, JASPER, LAWRENCE, RICHLAND, WABASH, & WAYNE COUNTIES		

POWER EQUIPMENT OPERATORS:

GROUP 1	24.10	9.85
GROUP 2	15.85	9.85

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Power Cranes, Draglines, Derricks, Shovels, Gradalls, Mechanics, Tractor Highlift, Tournadozer, Concrete Mixers with Skip, Tournamixer, Two-Drum Machine, One-Drum Hoist with Tower or Boom, Cableways, Tower Machines, Motor Patrol, Boom Tractor, Boom or Winch Truck, Winch or Hydraulic Boom Truck, Truck Crane, Tournapull, Tractor Operating Scoops, Bulldozer, Push Tractor, Asphalt Planer, Finishing Machine on Asphalt, Large Rollers on Earth, Rollers on Asphalt Mix, Ross Carrier or Similar Machine, Gravel Processing Machine, Asphalt Plant Engineer, Paver Operator, Farm Tractor with Half Yard Bucket and/or Backhoe Attachments, Dredge Engineer, or Dredge Operator, Central Mix Plant Engineer, CMI or Similar Type Machine, Truck or Skid Mounted Concrete Pump, Tower Crane, Engine or Rock Crusher Plant, Concrete Plant Engineer, Ditching Machine with Dual Attachment, Tractor Mounted Loaders, Cherry Picker, Hydro Crane, Standard or Dinkey Locomotives, Scoopmobiles, Euclid Loader, Soil Cement Machine, Back Filler, Elevating Machine, Power Blade, Drilling Machines Including Well Testing, Caissons, Shaft or Any Similar Type Drilling Machines, Motor Driven Paint Machine, Pipe Cleaning Machine, Pipe Wrapping Machine, Pipe Bending Machine, Apsco Paver, Boring Machine, (Equipment Greased), Barber- Greene Loaders, Formless Paver, (Well Point System), Concrete Spreader, Hydra Ax, Span Saw and Similar types, Marine Scoops, Brush Mulcher, Brush Burner, Mesh Placer, Tree Mover, Helicopter Crew (3), Piledriver - Skid or Crawler, Stump Remover, Root Rake, Tug

Boat Operator, Refrigerating Machine, Freezing Operator, Chair Cart-Self Propelled, Hydra Seeder, Straw Blower, Power Sub Grader, Bull Float, Finishing Machine, Self-Propelled Pavement Breaker (Backhoe Attached), Lull (or Similar Type Machine), Two Air Compressors, Compressors Hooked in Manifold, Overhead Crane, Chip Spreader, Mud Cat, Sull-Air Fork Lifts (Except When Used For Landscaping Work), Soil Stabilizer (Seaman Tiller, Bo Mag, Rago Gator and Similar Types or Equipment), Tube Float, Spray Machine, Curing Machine, Concrete or Asphalt Milling Machine, Snooper Truck Operator.

GROUP 2: Concrete Mixers Without Skips, Rock Crusher, Ditching Machine Under 6', Curbing Machine, one Drum Machines without Tower or Boom, Air Tugger, Self-Propelled Concrete Saw, Machine-Mounted Post Hole Digger, Two to Four Generators, Water Pumps, or Welding Machines, within 400 ft, Air Compressor 600 cu. ft. and Under, Rollers on Aggregate and Seal Coat Surfaces, Fork Lifts (When Used For Landscaping Work, Concrete and Blacktop Curb Machine, Farm Tractor with less than Half Yard Bucket, One Water Pump, Oilers, Air Valves or Steam Valves, One Welding Machine, Truck Jack, Mud Jack, Gunnite Machine, House Elevators when used for Hoisting Material, Engine Tenders, Wagon Drill, Flex Plane, Conveyor, Siphons and Pulsometer, Switchman, Fireman on Paint Pots, Fireman on Asphalt Plants, Distributor Operators on Trucks, Tampers, Self-Propelled Power Broom, Striping Machine (Motor Driven), Form Tamper, Bulk Cement Plant Equipment Greaser, Deck Hands, Truck Crane Oiler_Driver, Cement Blimps, Form Grader, Temporary Heat, Throttle Valve, Farm Tractor, Super Sucker (And Similar Type of Equipment).

IRON0046G 05/01/2002

	Rates	Fringes
EFFINGHAM (Excluding Dexter & East thereof), FAYETTE (Avena & North thereof) COUNTIES		
IRONWORKERS	22.88	10.82

* IRON0103G 04/01/2003

	Rates	Fringes
CLAY (Louisville & South thereof), EDWARDS, FRANKLIN (Northeast corner), GALLATIN, HAMILTON, JEFFERSON (East of Mt. Vernon), LAWRENCE (Southern 1/2 including Lawrenceville), MARION (Southeast), RICHLAND (Southern 1/2), SALINE (Northeastern 1/3), WABASH, WAYNE, & WHITE COUNTIES		
IRONWORKERS	23.50	10.40

IRON0392B 03/01/2003

	Rates	Fringes
FAYETTE (Southern 1/2 below Brownstown), JACKSON (Remainder), JEFFERSON (Mt. Vernon & area West thereof), MARION, PERRY, & RANDOLPH COUNTIES		
IRONWORKERS	23.65	12.10

IRON0439C 06/01/2002

	Rates	Fringes
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CLAY (Except Louisville & South thereof), CRAWFORD, EFFINGHAM
(Dexter & East thereof), JASPER, LAWRENCE (Northern half
excluding Lawrenceville), & RICHLAND COUNTIES

IRONWORKERS	22.82	11.04
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IRON0782F 05/01/2002

	Rates	Fringes
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ALEXANDER, FRANKLIN, GALLATIN, HARDIN, JACKSON (Except Ava and
Elkville TWPS), JOHNSON, MASSAC, PERRY, POPE, PULASKI, SALINE
(Except vicinity of El Dorado and area Northeast thereof), UNION,
& WILLIAMSON COUNTIES:

IRONWORKERS	20.85	9.46
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LABO0459D 08/01/2002

	Rates	Fringes
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RANDOLPH (SPARTA & VIC.) COUNTY:
LABORERS:

HEAVY CONSTRUCTION:

GROUP 1-	21.10	9.65
GROUP 2-	21.35	9.65
GROUP 3-	21.60	9.65
GROUP 4-	22.625	9.65

GROUP 1 - General Laborers

GROUP 2 - Work in septic tanks, cesspools, or dry wells (old or
new); All feeders, mixers and nozzles men on gunnite or
sandblasting work; When handling creosoted material; Raking or
luting asphalt; Burning or cutting with torch; Working on bottom
of sewer trenches on the final grading, laying or caulking of
performed sectional sewer pipe; High time (20 feet or over),
where exposed to an open fall; Operator of motor buggies; Any
work performed in or on all types of cased wells; Cooking, mixing
and applying of mastic such as self-seal and/or other coal
derivatives

GROUP 3 - Brick masons and plasterer tenders

GROUP 4 - Dynamite and Powder men

LABO0738A 04/01/2002

	Rates	Fringes
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FRANKLIN, GALLATIN, HARDIN, JACKSON, JOHNSON, PERRY, POPE,
SALINE, WILLIAMSON COUNTIES:

LABORERS	19.05	8.45
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Asbestos abatement and removal
of hazardous materials from
non-mechanical systems; and
hazardous and toxic waste
clean up

19.05	8.45
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LABO0773B 04/01/2002

	Rates	Fringes
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ALEXANDER, MASSAC, PULASKI (Southern 2/3) COUNTIES:

LABORERS	19.05	8.45
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Asbestos abatement and removal
of hazardous materials from

non-mechanical systems; and
hazardous and toxic waste
clean up

19.05

8.45

LABO0925B 08/01/2002

Rates

Fringes

RANDOLPH COUNTY (Chester and vicinity)

LABORERS (HEAVY CONSTRUCTION):

GROUP 1	21.00	9.75
GROUP 2	21.25	9.75
GROUP 3	21.50	9.75
GROUP 4	22.525	9.75

LABORERS CLASSIFICATIONS

GROUP 1: General Laborers

GROUP 2: Work in septic tanks, cesspools, or dry wells (old or new); All feeders, mixer and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking of luting asphalt; Burning or cutting with torch; Working on bottom of sewer trenches on the final grading, laying or caulking of performed sectional sewer pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3: Brick mason tenders, and plasterer tenders

GROUP 4: Dynamite and powder men

LABO1280A 04/01/2000

Rates

Fringes

CLAY, CRAWFORD, EDWARDS, EFFINGHAM, FAYETTE, HAMILTON, JASPER, JEFFERSON, LAWRENCE, MARION, RICHLAND, WABASH, WAYNE, & WHITE COUNTIES

LABORERS	18.10	7.50
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Asbestos Abatement and Removal
of Hazardous Materials from
Non-Mechanical Systems; and
Hazardous and Toxic Waste

Clean up	18.10	7.65
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LABO1330A 04/01/2002

Rates

Fringes

PULASKI(Northern 1/3)& UNION COUNTIES:

LABORERS	19.05	8.45
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Asbestos abatement and removal
of hazardous materials from
non-mechanical systems; and
hazardous and toxic waste
clean up

19.05

8.45

PAIN0058F 05/01/2000

Rates

Fringes

FAYETTE COUNTY

INDUSTRIAL PAINTERS:

Brush	23.02	6.60
Spraying, Blasting, and Steam Cleaning	25.02	6.60

PAIN0058G 05/01/2000		
	Rates	Fringes
FAYETTE COUNTY		
BRIDGE PAINTERS:		
Brush	23.02	6.60
Spray and Blast	25.02	6.60

PAIN0058R 05/01/1999		
	Rates	Fringes
ALEXANDER, FRANKLIN, GALLATIN, HARDIN, JACKSON, JOHNSON, PERRY, POPE, PULASKI, RANDOLPH, SALINE, UNION, & WILLIAMSON COUNTIES:		
PAINTERS	20.77	6.03
PAINTERS (BRIDGES & DAMS)	23.07	6.03

PAIN0124B 05/01/2000		
	Rates	Fringes
CLAY, HAMILTON, JEFFERSON, MARION, & WAYNE COUNTIES		
INDUSTRIAL PAINTERS:		
Brush	18.05	4.40
Bridges, Spray, and Sandblasting	21.15	4.40

PAIN0156I 04/01/2003		
	Rates	Fringes
EDWARDS, WABASH , & WHITE COUNTIES:		
PAINTERS:		
Brush, Roller, & Paperhangers	21.25	7.98
Drywall Finishers, Plasterers	21.50	7.98
Spray, Sandblast, Power Tools, Waterblast & Steam Cleaning	22.25	7.98
Brush, & Roller of Mastics, Creosotes		
Kwinch Koate, Coal Tar Epoxy	22.25	7.98
Spray for Mastics, Creosotes, Kwinch Koate, Coal Tar Epoxy	23.25	7.98

PAIN0500E 05/01/2002		
	Rates	Fringes
MASSAC COUNTY:		
PAINTERS:		
Commercial	16.00	5.50
Industrial	18.25	5.50
Bridges & Dams	22.25	5.50
Spray, Sandblasting and water blast units with 3500 PSI receive a \$.50 per hour premium. All work forty feet and above receive a \$1.00 per hour premium.		

PAIN1705E 04/01/2000		
	Rates	Fringes
CRAWFORD, EFFINGHAM, JASPER, LAWRENCE, & RICHLAND, COUNTIES		

PAINTERS:

BRUSH & ROLLER		
0-30 ft	20.90	6.63
Over 30 ft	21.70	6.63
Over 100 ft	22.70	6.63
BLASTING, SPRAYING, PRESSURE		
WASHING		
0-30 FT	21.90	6.63
Over 30 ft	24.20	6.63
Over 100 ft	25.20	6.63

PLAS0018Q 05/01/2001

	Rates	Fringes
DE WITT (Clinton and South thereof), EFFINGHAM (Northern half North from an East-west line drawn approximately 3 miles south of Effingham), MACON, MOULTRIE (Northeastern corner including Lovington, Bethany), PIATT (South of Monticello), & SHELBY (Excludes the towns of Cowden, Herrick, Lakewood, Moweaqua, Oconee, Shelbyville, Tower Hill, & Westervelt) COUNTIES:		
CEMENT MASONS	21.175	9.10

PLAS0143D 04/01/2001

	Rates	Fringes
CRAWFORD, LAWRENCE, & WABASH COUNTIES		
CEMENT MASONS	20.10	6.40

PLAS0143J 01/01/2003

	Rates	Fringes
ALEXANDER, FRANKLIN, GALLATIN, HARDIN, JACKSON, JOHNSON, MASSAC, PERRY, POPE, PULASKI, RANDOLPH, SALINE, UNION, & WILLIAMSON COUNTIES:		
CEMENT MASONS	23.35	5.45

PLAS0143L 04/01/2001

	Rates	Fringes
CLAY, EDWARDS, FAYETTE, HAMILTON, JASPER, JEFFERSON, MARION, RICHLAND WAYNE AND WHITE COUNTIES:		
CEMENT MASONS	21.75	4.75

PLAS0143M 04/01/2001

	Rates	Fringes
EFFINGHAM (Southern half, South from an East-West line drawn approximately 3 miles North of Effingham) COUNTY:		
CEMENT MASONS	21.75	4.75

TEAM0001F 05/01/2002

	Rates	Fringes
ALEXANDER, CHAMPAIGN, CHRISTIAN, CLARK, CLAY, COLES, CRAWFORD, CUMBERLAND, DE WITT, DOUGLAS, EDGAR, EDWARDS, EFFINGHAM, FAYETTE, FORD (Southern 1/2), FRANKLIN, GALLATIN, HAMILTON, HARDIN, IROQUOIS (Southern & Northwestern parts), JACKSON, JASPER, JEFFERSON, JOHNSON, LAWRENCE, MARION, MASSAC, MOULTRIE, PERRY, PIATT, POPE, PULASKI, RICHLAND, SALINE, SHELBY, UNION, VERMILION, WABASH, WAYNE, WHITE, & WILLIAMSON COUNTIES		

TRUCK DRIVERS:

GROUP 1	23.62	5.00+a
GROUP 2	24.02	5.00+a
GROUP 3	24.22	5.00+a
GROUP 4	24.47	5.00+a
GROUP 5	25.22	5.00+a

FOOTNOTE:

a. \$91.00 per week

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: Drivers on 2 Axle Trucks Hauling Less Than 9 Tons. Air Compressor and Welding Machines & Brooms, Including Those Pulled by Separate Units, Warehousemen, Greasers & Tiremen, Pickup Trucks When Hauling Material, Tools, or Men to and From & on the Job Site, & Fork Lifts up to 6,000 LB. Capacity.

GROUP 2: Two or Three Axle Trucks Hauling more than 9 Ton But Hauling less than 16 Ton, A-Frame Winch Trucks, Hydrolift Trucks, or Similar Equipment When Used For Transportation Purposes. Fork Lifts Over 6,000 LB. Capacity, Winch Trucks, & Four Axle Combination Units.

GROUP 3: Two, Three or Four Axle Trucks Hauling 16 Ton or more, Drivers on Water Pulls, Mechanics, Five Axle or more Combination Units.

GROUP 4: Lowboy & Oil Distributors.

GROUP 5: Drivers who require special protective clothing while employed on hazardous waste work.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial

contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

00800.1

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SECTION 00800 - SPECIAL CLAUSES

1. REFERENCE DRAWINGS.

a. One set of the reference drawings listed on Drawing No. BM-RL-7/G-1 which cover details of the existing structure, will be included in each set of the contract drawings furnished the Contractor without charge, in accordance with Contract Clause DFARS 252.236-7001. Drawings showing additional details are available for examination at the Dept. of the Army, St. Louis District, Corps of Engineers, St. Louis, Missouri. Additional prints of reference drawings will be furnished the Contractor on request at the cost of reproduction.

b. The stationing and dimensions shown on the contract and reference drawings for the existing structure have been taken from the original contract drawings and the shop drawings for the original construction. The Contractor shall verify all the above stationing and dimensions and shall be responsible for making the new material and work fit the existing conditions.

2. PAY REQUESTS. Pay requests authorized in the Contract Clause entitled "Payments Under Fixed-Price Construction Contracts", will be paid pursuant to the clause entitled "Prompt Payment for Construction Contracts". Pay requests shall be submitted on ENG Form 93 and 93a, "Payment Estimate-Contract Performance" and "Continuation", respectively. All information and substantiation required by the identified contract clauses shall be submitted with the ENG Form 93, and the required certification shall be included on the last page of the ENG Form 93a, signed by an authorized official of the Contractor and dated when signed. The designated billing office is the Office of the Area Engineer.

3. PHYSICAL DATA (APR 1984). FAR 52.236-4. Data and information furnished or referred to below is furnished for the Contractor's information. The Government shall not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.

a. Physical Conditions. The indications of physical conditions on the drawings and in the specifications are the result of site investigations by surveys and borings. The Government has acquired permits pertaining specifically to this contract. After award a copy of each permit will be provided to the Contractor. A listing of permits acquired by the Government is as follows:

- (1) National Pollution Discharge Elimination System (NPDES)
- (2) Section 404 of the Clean Water Act
- (3) Section 401 Water Quality Certification

b. Weather Conditions. Information with respect to temperatures and precipitation may be obtained from the National Weather Service.

c. Transportation Facilities. Railroads and highways serve the general area of the work.

4. WORK AREAS. In accordance with the Contract Clause entitled, "Operations and Storage Areas", and subject to the approval of the Contracting Officer and the restrictions imposed by SECTION 01130 - ENVIRONMENTAL PROTECTION, of the Technical Provisions, the Contractor will be allowed use of Government-controlled land within the construction limits shown on the drawings or as specified herein. Any additional land, including ingress and egress, required by the Contractor, shall be obtained by the Contractor at its own expense.

5. PUBLIC UTILITIES AND PRIVATE IMPROVEMENTS.

a. Unless otherwise specified, shown on the drawings, or stated in writing by the Contracting Officer, the Contractor shall not move or disturb any public utilities or private improvements. Such removals, alterations, and/or relocations, where necessary, will be made by others. The locations shown on the drawings for underground utilities are approximate only. The exact locations of such utilities shall be determined by the Contractor in the field prior to commencing construction operations in their vicinity.

b. The attention of the Contractor is directed to the possibility that public utilities or private improvements may be encountered within the construction limits, some of which may be buried, and the existence of which is presently not known. Should any such utilities or improvements be encountered, the Contractor shall immediately notify the Contracting Officer so that a determination may be made as to whether they shall be removed, relocated, or altered. After such determination is made, the Contractor shall, if so directed by the Contracting Officer, remove, relocate, or alter them as required and an equitable adjustment will be made. In the event the Contracting Officer arranges for such removals, alterations, or relocations to be performed by others, the Contractor shall cooperate with such others during the latter's removal, alteration, or relocation operations.

6. DAMAGE TO WORK.

a. The responsibility for damage to any part of the work to be performed under this contract shall be as set forth in the clause of the contract entitled "Permits and Responsibilities". However, if the cofferdam(s) is constructed in accordance with plans and progress schedules approved by the Contracting Officer, but is overtopped by flood and such flood causes damage to the cofferdam or if any part of the permanent work is damaged by flood or earthquake, which damage is not due to the failure of the Contractor to take reasonable precaution or to exercise sound engineering and construction practices in the conduct of the work, the Contractor shall make the repairs ordered by the Contracting Officer and full compensation for such repairs will be made at the applicable contract unit or lump sum prices as fixed and established in the contract. If, in the opinion of the Contracting Officer, there are no contract unit or lump sum prices applicable to any part of such damaged work, an equitable adjustment pursuant to the Contract Clause entitled, "Changes", will be made as full compensation therefor.

b. The Contractor may, subject to approval of the Contracting Officer, or the Contracting Officer may order the Contractor to, flood or breach the cofferdam during a rise prior to, and in anticipation of, natural flooding due to overtopping. Such flooding or breach will be considered the same as though the cofferdam, if constructed in accordance with plans and progress schedules approved by the Contracting Officer, had been overtopped,

in which event an equitable adjustment will be made for damages to the cofferdam and/or any part of the permanent work, as provided in (a) above.

7. LAYOUT OF WORK.

a. The Government will establish the following horizontal and vertical control at the site of the work:

(1) Six horizontal control points (three sets that are intervisible);

(2) Three vertical benchmarks.

b. From the horizontal and vertical control established by the Government, the Contractor shall complete the layout of the work and shall be responsible for all measurements that may be required for the execution of the work to the location and limit marks prescribed in the specifications or on the contract drawings, subject to such modifications as the Contracting Officer may require to meet changed conditions or as a result of necessary modifications to the contract work.

c. The Contractor shall furnish at its own expense such items as stakes, templates, platforms, equipment, tools and material, and all labor as may be required in laying out any part of the work from the horizontal and vertical control established by the Government. It shall be the responsibility of the Contractor to maintain and preserve all stakes and other marks established by the Contracting Officer until authorized to remove them, and if such marks are destroyed by the Contractor or through its negligence prior to their authorized removal, they may be replaced by and at the discretion of, the Contracting Officer, and the expense of replacement will be deducted from any amounts due or to become due the Contractor. The Contracting Officer may require that work be suspended at any time when location and limit marks established by the Contractor are not reasonably adequate to permit checking of the work.

8. NOT USED.

9. PARTIAL PAYMENT. At the discretion of the Contracting Officer, partial payment will be made for equipment delivered and stored on site or off site providing such storage is in accordance with the provisions of these specifications and the Contractor furnishes satisfactory evidence that title to such equipment has been acquired and that it will be utilized on the work covered by these specifications. Partial payment is defined as the invoice amount plus shipping costs. If the equipment is stored off site, the Government shall have the right to inspect the equipment.

10. CERTIFICATES OF COMPLIANCE. Any certificates required for demonstrating proof of compliance of materials with specification requirements shall be executed in 3 copies. Each certificate shall include the signature and title of an official authorized to certify in behalf of the manufacturing company and shall contain the name and address of the Contractor, the project name and location, and the quantity and date or dates of shipment or delivery to which the certificates apply. Copies of laboratory test reports submitted with certificates shall contain the name and address of the testing laboratory and the date or dates of the tests to which the report applies. Certification shall not be construed as relieving the Contractor from responsibility for furnishing satisfactory material if, after tests are performed on selected samples, the material is found not to meet the specific requirements.

11. PURCHASE ORDERS. Two copies of all purchase orders for other than stock materials showing the firm names and addresses and list of material shall be furnished to the Contracting Officer or an authorized representative as soon as issued.

12. SAFETY AND HEALTH REQUIREMENTS MANUAL EM 385-1-1. The Safety and Health Requirements Manual EM 385-1-1 forms a part of these specifications. EM 385-1-1 and its changes are available at <http://www.hq.usace.army.mil> (at the HQ homepage, select Safety and Occupational Health). The Contractor shall be responsible for complying with the current edition and all changes posted on the web as of the effective date of this solicitation. EM 385-1-1 is provided on the CD-ROM and the St. Louis District web site for each solicitation, however the Contractor shall be responsible for obtaining any changes to the manual which are available on the above web site.

13. ACCIDENT INVESTIGATIONS AND REPORTING. Refer to EM 385-1-1, Paragraph 01.D. Accidents shall be investigated and reports completed by the immediate supervisor of the employee(s) involved and reported to the Contracting Officer or an authorized representative within one working day after the accident occurs. The accident Investigation report shall be made on ENG Form 3394.

14. ACCIDENT PREVENTION PROGRAM. Refer to Contract Clause FAR 52.236-13 entitled, "Accident Prevention". Within 15 days after receipt of Notice of Award of the contract, and at least 7 days prior to the prework conference, the original and one copy of the Accident Prevention Program shall be submitted to the Contracting Officer for review. The program shall be prepared in the following format:

a. An executed MVS Form 385-33, Administrative Plan.

b. An executed MVS Form 385-359-R, Hazard Analysis.

c. A copy of company policy statement of accident prevention and any other guidance statements normally provided new employees. Each company employee shall be required to sign the company policy statement of accident prevention to verify that all employees have been informed of the safety program, and such signed statements shall be maintained at the project site.

The Contractor shall not commence physical work at the site until the program has been reviewed and found acceptable by the Contracting Officer, or an authorized representative. At the Contracting Officer's discretion, the Contractor may submit its Activity Hazard Analysis only for the first phase of construction provided that it is accompanied by an outline of the remaining phases of construction. All remaining phases shall be submitted and accepted prior to the beginning of work in each phase. Also refer to Section 1 of EM 385-1-1.

15. DAILY INSPECTIONS. The Contractor shall perform daily safety inspections and record them on the forms approved by the Contracting Officer.

Reports of daily inspections shall be maintained at the job site. The reports shall be records of the daily inspections and resulting actions. Each report shall include, as a minimum, the following:

a. Phase(s) of construction underway during the inspection.

b. Locations of areas inspections were made.

c. Results of inspection, including nature of deficiencies observed and corrective actions taken, or to be taken, date, and signature of the person responsible for its contents.

16. ENVIRONMENTAL LITIGATION.

(a) If the performance of all or any part of the work is ordered by a court of competent jurisdiction to be suspended, delayed, or interrupted as a result of environmental litigation, as defined below, the Contracting Officer, at the request of the Contractor, shall determine whether the order is due in any part to the acts or omissions of the Contractor or a Subcontractor at any tier not required by the terms of this contract. If it is determined that the order is not due in any part to acts or omissions of the Contractor or a Subcontractor at any tier other than as required by the terms of this contract, such suspension, delay, or interruption shall be considered as if ordered by the Contracting Officer in the administration of this contract under the terms of the Contract Clause entitled "Suspension of Work".

(b) The term "environmental litigation", as used herein, means a lawsuit alleging that the work will have an adverse effect on the environment or that the Government has not duly considered, either substantively or procedurally, the effect of the work on the environment.

17. TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER.

a. This provision specifies the procedure for the determination of time extensions for unusually severe weather in accordance with the Contract Clause entitled, "Default (Fixed-Price Construction)". In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

(1) The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.

(2) The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the Contractor.

b. The following schedule of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location and will constitute the base line for monthly weather time evaluations. The Contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

MONTHLY ANTICIPATED ADVERSE WEATHER DELAY
WORK DAYS BASED ON (5) DAY WORK WEEK

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
(8)	(8)	(6)	(6)	(5)	(5)	(5)	(5)	(5)	(6)	(6)	(6)

c. Upon acknowledgement of the Notice to Proceed (NTP) and continuing throughout the contract, the Contractor shall record on the daily

CQC report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the Contractor's scheduled work day. The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph b, above, the Contracting Officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and issue a modification in accordance with the Contract Clause entitled "Default (Fixed Price Construction)".

18. SUBCONTRACTS. In accordance with the Contract Clause entitled "Subcontracts", the Contractor shall, within seven days after the award of any subcontract by the Contractor or a Subcontractor, deliver to the Contracting Officer two copies of a completed Standard Form 1413. Both copies must contain the original signatures of both parties.

19. REQUIRED INSURANCE.

a. As required by the Contract Clause entitled "Insurance-Work on a Government Installation", the Contractor shall within 15 days after receipt of Notice of Award and prior to the commencement of work, furnish to the Contracting Officer, a written statement as evidence of the following minimum insurance:

(1) Workmen's Compensation. Amounts required by applicable jurisdictional statutes.

(2) Employer's Liability Insurance. \$100,000

(3) Comprehensive General Liability Insurance.

Bodily Injury - \$500,000 per occurrence

(4) Comprehensive Automobile Insurance.

Bodily Injury - \$200,000 each person
\$500,000 each accident
Property Damage - \$ 20,000 each accident

b. Statements of insurance should be submitted to the following address:

Department of the Army
St. Louis District, Corps of Engineers
Central Area Office; CEMVS-CO-CA
301 Riverlands Way
West Alton, Missouri 63386

20. PROTECTION OF MATERIAL AND WORK. The Contractor shall at all times protect and preserve all materials, supplies, and equipment of every description (including property which may be Government-furnished or owned) and all work performed. All reasonable requests of the Contracting Officer to enclose or specially protect such property shall be complied with. If, as determined by the Contracting Officer, material, equipment, supplies, and work performed are not adequately protected by the Contractor, such property may be

protected by the Government and the cost thereof may be charged to the Contractor or deducted from any payments due to the Contractor.

21. CONTAMINATION OF WATER. In addition to the requirements set forth in 01130-3.3, Protection of Water Resources, the Contractor shall take positive protective measures to prevent spillage of potential pollutant materials such as fuel, emulsion materials, chemicals etc., from storage containers or equipment, into lakes or tributary waters. Such positive protective measures may include, but not limited to, the following:

(1) A berm enclosure of sufficient capacity to contain such materials.

(2) Security measures to prevent acts of vandalism which could result in spillage of such materials (fences, guards, etc.).

(3) Storage of such materials in an area where the terrain would preclude leakage into lake or tributary waters.

(4) Utilization of secure Government storage areas if the Contracting Officer indicates such space is available. No storage past immediate needs (2 days) without the consent of the Contracting Officer.

The Contractor shall submit its proposals for implementing the above provisions in accordance with 01130-1.5, Environmental Protection Plan.

22. COMMERCIAL WARRANTY. The Contractor agrees that the standard commercial equipment furnished under this contract shall be covered by the most favorable commercial warranties the manufacturer gives to any customer for such equipment, and that the rights and remedies provided herein are in addition to and do not limit any rights afforded to the Government by any other clause of this contract. The Contractor shall furnish two copies of the warranties to the Contracting Officer.

23. ORDER AND COORDINATION OF WORK. The Contractor may start and complete the work in such order and sequence as desired subject to compliance with the following paragraphs:

a. The Contractor is advised that another Contractor may be working at the project site during the life of this contract, and shall coordinate its work with the other Contractor and shall cooperate with the Contracting Officer's Representative and other Contractors to the fullest extent possible so as to not interfere with or hinder the progress of other contracts. The Contracting Officer will have the final decision in the event of a controversy between Contractors.

b. Traffic on top of the dam shall be closed down for a maximum of 2 days.

c. The upland borrow area shall be shaped and graded as shown on the drawings and as directed by the Contracting Officer.

d. The Contractor shall acquire all necessary permits for hauling over area roads.

e. Prior to commencing work or hauling any materials to the work site using existing local, county or State roads, the Contractor shall submit a "Haul Road" Plan to the Contracting Officer for approval. This plan shall

indicate the roads that the Contractor proposes to use to get the various materials from their place of origin to the work site. The plan shall indicate the type of haul units the Contractor proposes to use to transport the material along with the maximum wheel and axle loads for each unit. Prior to submitting the Plan to the Contracting Officer, the Contractor shall have the plan approved by the governing body having jurisdiction over each road the Contractor proposes to use. (Note: The Dam road is Corps owned and either side is county maintained.) Below are listed several of the governing agencies having jurisdiction of the roads around the Rend Lake area:

- (1) City of Benton, Street Department (618) 438-3421
- (2) Franklin County Highway Department (618) 439-0331
- (3) City of West City, City Hall (618) 438-6131

f. The Contractor will be required to strictly adhere to a 25 MPH speed limit, or lower speeds as posted, for all of trucks or other vehicles traversing the Corps of Engineer roads at Rend Lake.

g. During the period of this contract, all roads in the Rend Lake area have a 72,000 pound gross weight restriction. (Note: the spillway bridge on the east-end of the dam has a 10 ton weight limit.)

24. AS-BUILT DRAWINGS.

a. "As-Built" Contract Drawings. The Contractor shall maintain a separate set of full-size contract drawings, marked up in red, to indicate as-built conditions. Each as-built contract drawing shall include the Contract Number (DACW43-XX-C-XXXX) associated with the contract. These drawings shall be maintained in a current condition at all times until completion of the work and shall be available for review by Government personnel at all times. All variations from the contract drawings, for whatever reason, including those occasioned by modifications, optional materials, and the required coordination between trades, shall be indicated. These variations shall be shown in the same general detail utilized in the contract drawings. Upon completion of the work, two (2) sets of the marked-up drawings shall be furnished to the Contracting Officer prior to acceptance of the work. The Government will withhold two percent of the total bid price of the items for which as-built contract drawings have not been submitted.

b. "As-Built" Shop Drawings. Upon completion of items of work, the Contractor shall revise the shop drawings to show "as-built" conditions. The notation "Revised to show 'as-built' conditions" shall be placed in red in the lower right corner of each drawing along with the initials of a responsible company representative. Each as-built shop drawing or catalog cut shall be identified by the Contract Number (DACW43-XX-C-XXXX) associated with the contract, and corresponding transmittal number from ENG Form 4025. "As-built" shop drawings of each Contractor-prepared construction drawing should be prepared as soon as possible after the construction detailed on a given drawing has been completed. After the "as-built" shop drawings have been prepared as described above and within 15 days after the contract completion date, the Contractor shall submit four (4) complete sets of as-built shop drawings, including catalog cuts, to the Contracting Officer. The Government will withhold two percent of the total bid price of the item for which as-built shop drawings have not been submitted.

25 THRU 31. NOT USED.

32. STONE SOURCES.

a. On the basis of information and data available to the Contracting Officer, stone meeting the quality requirements of these specifications has been produced from the sources listed at the end of these Special Clauses.

b. Stone may be furnished from any of the currently listed sources or, at the option of the Contractor, may be furnished from any other source designated by the Contractor and accepted by the Contracting Officer, subject to the conditions hereinafter stated.

c. It is the Contractor's responsibility to determine that the stone source or combination of sources selected are capable of supplying the quantities and gradation needed and at the rate needed to maintain the scheduled progress of the work.

d. After the award of the contract, the Contractor shall designate in writing only one source or one combination of sources from which stone will be furnished. If the Contractor proposes to furnish stone from a source not currently listed, only a single additional source for stone may be designated. Samples for acceptance testing shall be provided as required by SECTION-02270. If a source for stone so designated by the Contractor is not accepted for use by the Contracting Officer, the Contractor may not propose other sources but shall furnish the stone from a source listed at no additional cost to the Government.

e. Acceptance of a source of stone is not to be construed as acceptance of all material from that source. The right is reserved to reject materials from certain localized areas, zones, strata, or channels when such materials are unsuitable for stone as determined by the Contracting Officer. Materials produced from a listed or unlisted source shall meet all the requirements of SECTION 02270, of the Technical Provisions of these specifications.

33. NOT USED.

34. PARTNERING. In order to most effectively accomplish this contract, the Government is willing to form a cohesive partnership with the Contractor. This partnership would strive to draw on the strengths of each organization in an effort to achieve a quality project done right the first time, within budget, and on schedule. This partnership would be bilateral in make-up and partnership will be totally voluntary. Any cost associated with effectuating this partnership will be agreed to by all parties and will be shared equally with no change in contract price.

35. SECTION 8(a) DIRECT AWARD. DFARS 252.219-7009

(a) This contract is issued as a direct award between the contracting office and the 8(a) Contractor pursuant to the Memorandum of Understanding dated May 6, 1998, between the Small Business Administration (SBA) and the Department of Defense. Accordingly, the SBA is not a party to this contract. SBA does retain responsibility for 8(a) certification, 8(a) eligibility determinations and related issues, and for providing counseling and assistance to the 8(a) Contractor under the 8(a) Program. The cognizant

SBA office is:

US Small Business Administration
St. Louis District Office
815 Olive Street Room 242
St. Louis, MO 63101-1569

(b) The contracting office is responsible for administering the contract and for taking any action on behalf of the Government under the terms and conditions of the contract; provided that the contracting office shall give advance notice to the SBA before it issues a final notice terminating performance, either in whole or in part, under the contract. The contracting office also shall coordinate with the SBA prior to processing any novation agreement. The contracting office may assign contract administration functions to a contract administration office.

(c) The Contractor agrees that--

(1) It will notify the Contracting Officer, simultaneous with its notification to the SBA (as required by SBA's 8(a) regulations at 13 CFR 124.308), when the owner or owners upon whom 8(a) eligibility is based plan to relinquish ownership or control of the concern. Consistent with Section 407 of Pub. L. 100-656, transfer of ownership or control shall result in termination of the contract for convenience, unless the SBA waives the requirement for termination prior to the actual relinquishing of ownership and control; and

(2) It will not subcontract the performance of any of the requirements of this contract without the prior written approval of the SBA and the Contracting Officer.

36. CHANGES IN PERFORMANCE OF WORK AS NEGOTIATED. The Contractor shall beforehand notify the Contracting Officer, in writing, of any change or substitution in utilization of a subcontractor, supplier, etc., from that which was relied on by the Government during the cost and pricing negotiation. Such notification shall include: 1) the name of the new subcontractor, supplier, etc.; 2) the work to be performed or material supplied; 3) the reason for the substitution and; 4) whether the Contractor's costs will remain the same, increase, or decrease as a result of the change. This notification shall also be applicable if the change results in work to be performed or material or equipment to be supplied by the Contractor.

xxx

August 1999

STONE SOURCES
ST. LOUIS DISTRICT

Source No.	Producer	MRM*	Lat.	Long.
1.	Tower Rock Stone Co., Grays Point, Mo.	47.0	37N	89W
2.	West Lake Quarry, Neely's Landing, Mo.	71.5	37N	89W
3.	Tower Rock Stone Co., Ste Genevieve Mo.	127.6	38N	90W
4.	Plattin Quarry, Ste. Genevieve, Mo.	139.0	38N	90W
5.	Mississippi Lime Quarry, Ste. Genevieve, Mo.	155.0	38N	90W
6.	Barnhart Limestone Inc., Barnhart, Mo.	156.0	38N	90W
7.	Bussen Quarry, St. Louis County, Mo.	168.0	38N	90W
8.	Bellefontaine Quarry, Fort Bellefontaine, Mo.	8.0**	38N	90W
9.	Fort Belle Quarry, Ft. Bellefontaine, Mo.	7.0**	38N	90W
10.	Calhoun Quarry, Batchtown, Ill.	241.0	38N	90W
11.	Wayne Smith Quarry, Louisiana, Mo.	281.0	39N	91W
12.	Anna Quarry, Anna, Ill.		37N	89W
13.	Bussen Quarry, Eureka, Mo.		38N	90W
14.	Calender Quarry, Pittsfield, Ill.		39N	90W
15.	Central Stone Quarry #1, Huntington, Mo.		39N	91W
16.	Central Stone Quarry #9, Perry, Mo.		39N	91W
17.	Central Stone Quarry #33, Florence, Ill.		39N	91W
18.	Columbia Quarry Co. #15, Cypress, Ill.		37N	89E
19.	Charleston Stone Co., Charleston, Ill.		39N	88W
20.	Columbia Quarry #1, Columbia, Ill.		38N	90W
21.	Columbia Quarry #9, Dupo, Ill.		38N	90W

Source No.	Producer	MRM*	Lat.	Long.
22.	Falling Spring Quarry Co., Falling Springs, Ill.		38N	90W
23.	Magruder Quarry, Troy, Mo.		38N	90W
24.	Fred Weber Inc., Winfield Mo.		38N	90W
25.	Bluff City Mineral, E. Alton, Ill.		38N	90W
26.	Columbia Quarry Co. #7, Waterloo, Ill.		38N	90W
27.	Seminole Ag. Lime Co., Dexter, Mo.		37N	90W
28.	S-S-S Inc., New London, Mo.		39N	91W
29.	South East Mo. Stone Co., Cape Girardeau, Mo.		37N	89W
30.	Base Rock Mineral, (formally know as Resco, Inc.) Bonne Terre, Mo.		37N	90W
31.	Williamsville Stone Co., Poplar Bluff, Mo.		36N	90W
32.	Nokomis Quarry, Nokomis, Ill.		39N	89W
33.	Brickeys Stone Co., Bloomsdale, Mo.	136.0	38N	90W
34.	Martin Marietta Aggregate, Perryville, Mo.		37N	89W

* Mississippi River Mile

** Missouri River Mile

1. Contractor		2. Contract Name & No.		3. Date	
4. Project Superintendent		5. Shift/day	5a. Hours/shift	5b. Maximum employees/shift	
6a. TRAINING - List subjects to be discussed with employees in safety indoctrination.					
6b. TRAINING - List mandatory training and certifications which are applicable to this project (e.g., explosive actuated tools, confined space entry, crane operator, diver, vehicle operator, etc.)					
7. Responsibility & Authority - Who is responsible for safety?					
Project:		Corporate:		Line of Authority?	
8. Who will conduct safety inspection?		8a. How		8b. When	
9a. Is safety & health policy attached?		9b. Is safety program attached?		9c. Day & hour weekly safety meeting	
10. How will subcontractor & supplies be controlled?		11. What are their safety responsibilities?			
12. Who will report accidents, exposure data?					
13. MEDICAL SUPPORT. Outline on-site medical support and off-site medical arrangements.					

14. Outline procedures for conducting hazard assessments & written certification of PPE	Who?	When?	How?

15. Names of first aid attendants having certificates	Type of certificate & expiration date	Names of USCG licensed boat operators. Type license & expiration date.

On a separate sheet submit your proposed layout of temporary buildings and facilities (including subcontractors) and traffic patterns including access roads, haul roads, R.R.s. utilities, etc.

The _____ will pursue a positive program of training,, inspections
(Company)
and hazard control throughout the term of this contract. Mr./Ms. _____ has
the responsibility and authority for enforcing them.

Contractor's Signature

Date

C.O. or C.O.R. Signature

Date

ACCIDENT PREVENTION PROGRAM HAZARD ANALYSIS			
1. Contract No.	2. Project	3. Facility	
4. Date	5. Location	6. Estimated Start Date	
7. PRINCIPAL STEPS	8. POTENTIAL HAZARDS	9. RECOMMENDED CONTROLS	
10. EQUIPMENT TO BE USED	11. INSPECTION REQUIREMENTS	12. TRAINING REQUIREMENTS	
14. Report discussed with contractor/superintendent on _____ _____ Area/Resident Engineer (Signature)		15. Contracting Officer (Signature & Date) or Contracting Officer Representative	
MVS 385-359-R MAY99 Proponent: CEMVS-SO			

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SECTION 01025 - MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.1 MOBILIZATION AND DEMOBILIZATION. Mobilization and demobilization will not be measured for payment. Payment will be made for costs associated with mobilization and demobilization, as defined in SECTION 00700 CONTRACT CLAUSE entitled, PAYMENT FOR MOBILIZATION AND DEMOBILIZATION.

1.2 CLEARING, GRUBBING AND STRIPPING. Payment for clearing, grubbing and stripping will be made at the contract lump sum price for "Clearing, Grubbing and Stripping", which price and payment shall constitute full compensation for the costs of all labor, equipment, and materials required to perform work associated with excavation and grubbing, as specified in the applicable portions of SECTION 02110 - CLEARING, GRUBBING AND STRIPPING, and as shown on the drawings.

1.3 EARTHWORK. Payment for earthwork will be made at the contract lump sum price for "Earthwork", which price and payment shall constitute full compensation for the costs of all labor, equipment, and materials required to perform work associated with excavation and embankment, including the removal of piezometers, as specified in the SECTION 02220 - EXCAVATION and SECTION 02221 - EMBANKMENT, and as shown on the drawings.

1.4 GRADED STONE C.

1.4.1 Measurement. Graded stone C will be measured for payment by the ton (2,000 pounds) with final quantities rounded to the nearest whole ton. Stone weight to be paid for will be determined from certified weight tickets which shall be furnished by the Contractor without additional cost to the Government. A certified weight ticket shall be defined as each truck being weighed empty, and again when loaded and the ticket, identified by the Contractor's name and the contract number, signed by the approved quarry representative with the statement "certified correct". This procedure shall be followed for each load hauled. The Contractor shall initial each ticket to verify the accuracy and completeness of each ticket before submitting it to the Government. Certification stating the scales were tested and approved by the local authority shall be furnished by the Contractor.

1.4.2 Payment. Payment for graded stone C will be made at the contract unit price per ton for "Graded Stone C", which price and payment shall constitute full compensation for all costs of furnishing, transporting and placing the material required and for maintaining the work until acceptance as prescribed in SECTION 02270 - STONE PROTECTION, and as shown on the drawings.

1.5 BEDDING MATERIAL.

1.5.1 Measurement. Bedding material will be measured for payment by the ton (2,000 pounds) with final quantities rounded to the nearest whole ton. Stone weight to be paid for will be determined from certified weight tickets which shall be furnished by the Contractor without additional cost to the Government. A certified weight ticket shall be defined as each truck being weighed empty, and again when loaded and the ticket, identified by the Contractor's name and the contract number, signed by the approved quarry representative with the statement "certified correct". This procedure shall be followed for each load hauled. The Contractor shall initial each ticket to verify the accuracy and completeness of each ticket before submitting it to the Government. Certification stating the scales were tested and approved by

the local authority shall be furnished by the Contractor.

1.5.2 Payment. Payment for bedding material will be made at the contract unit price per ton for "Bedding Material", which price and payment shall constitute full compensation for all costs of furnishing, transporting and placing the material required and for maintaining the work, including the installation of geotextile, until acceptance as prescribed in SECTION 02270 - STONE PROTECTION and SECTION 02240 - GEOTEXTILE, and as shown on the drawings.

1.6 CRUSHED STONE SURFACING.

1.6.1 Measurement. The crushed stone material for permanent and temporary facilities will be measured for payment by the ton (2,000 pounds) with final quantities rounded to the nearest whole ton. Stone weight to be paid for will be determined from certified weight tickets which shall be furnished by the Contractor without additional cost to the Government. A certified weight ticket shall be defined as each truck being weighed empty, and again when loaded and the ticket, identified by the Contractor's name and the contract number, signed by the approved quarry representative with the statement "certified correct". This procedure shall be followed for each load hauled. The Contractor shall initial each ticket to verify the accuracy and completeness of each ticket before submitting it to the Government. Certification stating the scales were tested and approved by the local authority shall be furnished by the Contractor.

1.6.2 Payment. Payment for crushed stone surfacing will be made at the contract unit price per ton for "Crushed Stone Surfacing", which price and payment shall constitute full compensation for all costs of furnishing, transporting and placing the crushed stone material required and for maintaining the work, including the installation of geotextile, until acceptance as prescribed in SECTION 02230 - CRUSHED STONE SURFACING and SECTION 02240 - GEOTEXTILE, and as shown on the drawings.

1.7 OVERFLOW WEIRS. Payment for all work associated with the overflow weirs, including the cellular confinement system and concrete work, will be made at the contract lump sum price for "Overflow Weirs", which price and payment shall constitute full compensation for the costs of all labor, equipment, and materials required to perform work as specified in these specifications and as shown on the drawings.

1.8 CULVERT PIPE, STOP LOG STRUCTURES, SLUICE GATE STRUCTURES AND END SECTIONS. Payment for all work associated with the culvert pipe, stop log structures, sluice gate structures and end sections, including geotextile, geogrid, painting and bedding material, will be made at the contract lump sum price for "Culvert Pipe, Stop log Structures, Sluice Gate Structures And End Sections", which price and payment shall constitute full compensation for the costs of all labor, equipment, and materials required to perform work as specified in these specifications and as shown on the drawings.

1.9 SIPHON. Payment for all work associated with the siphon, including metal work (guardrail and appurtenances and debris cage), painting, asphalt, crushed stone, pipe, electrical work and concrete, will be made at the contract lump sum price for "Siphon", which price and payment shall constitute full compensation for the costs of all labor, equipment, and materials required to perform work as specified in these specifications and as shown on the drawings.

1.10 ESTABLISHMENT OF TURF. Payment for establishment of turf will be made at the contract lump sum price for "Establishment of Turf", which price and payment shall constitute full compensation for the costs of all labor, equipment, and materials required to perform work as specified in SECTION 02900 and as shown on the drawings.

1.11 STAFF GAGES. Payment for all work associated with the staff gages will be made at the contract lump sum price for "Staff Gages", which price and payment shall constitute full compensation for the costs of all labor, equipment, and materials required to perform work as specified herein and as shown on the drawings.

1.12 PIEZOMETER ABANDONMENT. Payment for all work associated with the abandonment of piezometers will be made at the contract subdivided unit price per each for "Piezometer Abandonment", which price and payment shall constitute full compensation for the costs of all labor, equipment, and materials required to perform work as specified herein and as shown on the drawings.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

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PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

xxx

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SECTION 01090 - SOURCES FOR REFERENCE PUBLICATIONS

PART 1 GENERAL

1.1 REFERENCES. Various publications are referenced in other sections of the specifications to establish requirements for the work. These references are identified in each section by document number, date and title.

The document number used in the citation is the number assigned by the sponsoring organization, e.g. UL 1 (1985; Rev thru Nov 1992) Flexible Metal Conduit. However, when the sponsoring organization has not assigned a number to a document, an identifying number has been assigned for convenience, e.g. UL's unnumbered 1992 edition of their Building Materials Directory is identified as UL-01 (1992) Building Materials Directory. The sponsoring organization number (UL 1) can be distinguished from an assigned identifying number (UL-1) by the dash mark (-).

1.2 ORDERING INFORMATION. The addresses of the organizations whose publications are referenced in other sections of these specifications are listed below, and if the source of the publications is different from the address of the sponsoring organization, that information is also provided. Documents listed in the specifications with numbers which were not assigned by the sponsoring organization should be ordered from the source by title rather than by number.

1.2.1 See Paragraph entitled, "Availability of Specifications Listed in The DOD Index of Specifications and Standards (DODISS)", of the Instructions to Bidders for the availability of non-commercial specifications.

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
(AASHTO)
444 N. Capital St., NW, Suite 249
Washington, DC 20001
Ph: 800-231-3475 202-624-5800
Fax: 800-525-5562 202-624-5806
Internet: www.aashto.org

ACI INTERNATIONAL (ACI)
P.O. Box 9094
Farmington Hills, MI 48333-9094
Ph: 248-848-3700
Fax: 248-848-3701
Internet: <http://www.aci-int.org>

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)
One East Wacker Drive, Suite 3100
Chicago, IL 60601-2001
Ph: 312-670-2400
Fax: 312-670-5403
Internet: www.aisc.org/

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
11 West 42nd St
New York, NY 10036
Ph: 212-642-4900
Fax: 212-398-0023
Internet: www.ansi.org/

ASME INTERNATIONAL (ASME)
Three Park Avenue
New York, NY 10016-5990
Ph: 212-591-7722
Fax: 212-591-7674
Internet: www.asme.org

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959
Ph: 610-832-9500
Fax: 610-832-9555
E-mail: cservice@astm.org

AMERICAN WELDING SOCIETY (AWS)
550 N.W. LeJeune Road
Miami, FL 33126
Ph: 800-443-9353 - 305-443-9353
Fax: 305-443-7559
Internet: <http://www.amweld.org>

AMERICAN WATER WORKS ASSOCIATION (AWWA)
6666 West Quincy
Denver, CO 80235
Ph: 800-926-7337 - 303-794-7711
Fax: 303-347-0804
Internet: www.awwa.org

CODE OF FEDERAL REGULATIONS (CFR)
Order from:
Government Printing Office
Washington, DC 20402
Ph: 202-783-3238
Fax: 202-275-7703
Internet: <http://www.pls.com:8001/his/cfr.html>

CORPS OF ENGINEERS (COE)
Order from:
U.S. Army Engineer Waterways Experiment Station
ATTN: Technical Report Distribution Section, Services
Branch, TIC
3909 Halls Ferry Rd.
Vicksburg, MS 39180-6199
Ph: 601-634-2355
Fax: 601-634-2506

ILLINOIS DEPARTMENT OF TRANSPORTATION (IDOT)
2300 South Dirksen Parkway
Springfield, IL 62764
Internet: <http://www.dot.state.il.us>

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
1300 N. 17th St., Suite 1847
Rosslyn, VA 22209
Ph: 703-841-3200

Fax: 703-841-3300
Internet: <http://www.nema.org/>

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
1 Batterymarch Park
P.O. Box 9101
Quincy, MA 02269-9101
Ph: 617-770-3000
Fax: 617-770-0700
Internet: www.nfpa.org

PRECAST/PRESTRESSED CONCRETE INSTITUTE (PCI)
209 West Jackson Blvd.
Chicago, IL 60606-6938
Ph: 312-786-0300
Fax: 312-786-0353
Internet: www.pci.org
e-mail: info@pci.org

THE SOCIETY FOR PROTECTIVE COATINGS (SSPC)
40 24th Street, 6th Floor
Pittsburgh, PA 15222-4656
Ph: 412-281-2331
Fax: 412-281-9992
Internet: www.sspc.org

UNDERWRITERS LABORATORIES (UL)
333 Pfingsten Rd.
Northbrook, IL 60062-2096
Ph: 847-272-8800
Fax: 847-272-8129
Internet: <http://www.ul.com/>
e-mail: northbrook@us.ul.com

PART 2 MATERIALS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

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SECTION 01130
ENVIRONMENTAL PROTECTION

PART 1 GENERAL

1.1 APPLICABLE PUBLICATIONS. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

1.1.1 Code of Federal Regulations (CFR).

40 CFR 261 Identification and listing of Hazardous Waste

1.1.2 Engineering Manuals (EM).

EM 385-1-1 U.S. Army Corps of Engineers Safety and Health Requirements Manual

1.2 DEFINITIONS. Environmental pollution and damage is defined as the presence of chemical, physical, or biological elements or agents that adversely affect human health or welfare; unfavorably alter ecological balances of plant or animal communities; or degrade the environment from an aesthetic, cultural or historic perspective. Environmental protection is the prevention/control of pollution and habitat disruption that may occur during construction. The control of environmental pollution and damage requires consideration of air, water, land, biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive materials; and other pollutants.

1.3 SUBMITTALS. Government approval is required for all submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with SECTION 01300 - SUBMITTAL PROCEDURES:

1.3.1 Statements. Environmental Protection Plan; GA. Submit plan detailing Contractor's procedures for complying with all applicable environmental protection regulations and the special requirements of this contract.

1.4 ENVIRONMENTAL PROTECTION REQUIREMENTS. The Contractor shall comply with all applicable Federal, State, and local laws and regulations. The Contractor shall provide environmental protective measures and procedures to prevent and control pollution, limit habitat disruption, and correct environmental damage that occurs during construction.

1.4.1 Protection of Features. This section supplements the Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS. The Contractor shall prepare a list of features requiring protection under the provisions of the contract clause, which are not specially identified on the drawings as environmental features requiring protection. The Contractor shall protect those environmental features shown

specially on the drawings, even if such preservation interferes with the Contractor's work under this contract.

1.4.2 Permits. This section supplements the Contractor's responsibility under the contract clause PERMITS AND RESPONSIBILITIES to the extent that the Government has already obtained environmental permits. A listing of the environmental permits is provided in SECTION 00800 - SPECIAL CLAUSES, Paragraph 3, Physical Data, and a copy of each permit will be provided at the preconstruction conference. The Contractor shall comply with the terms, and conditions of these permits. The Contractor shall also comply with other environmental commitments made by the Government.

1.4.3 Special Environmental Requirements. The Contractor shall comply with any special environmental requirements included at the end of this section. These special environmental requirements are an outgrowth of environmental commitments made by the Government during the project development.

1.4.4 Environmental Assessment of Contract Deviations. The Contract specifications have been prepared to comply with the special conditions and mitigation measures of an environmental nature which were established during the planning and development of this project. The Contractor is advised that deviations from the drawings or specifications (e.g., proposed alternate borrow areas, disposal areas, staging areas, alternate access routes, etc.) could result in the requirement for the Government to reanalyze the project from an environmental standpoint. Deviations from the construction methods and procedures indicated by the plans and specifications which may have an environmental impact will require an extended review, processing, and approval time by the Government. The Contracting Officer reserves the right to disapprove alternate methods, even if they are more cost effective, if the Contracting Officer determines that the proposed alternate method will have an adverse environmental impact.

1.5 ENVIRONMENTAL PROTECTION PLAN. Within 15 calendar days of Notice of Award, the Contractor shall submit an Environmental Protection Plan for review and acceptance by the Contracting Officer. The Government will consider an interim plan for the first 30 days of operations. However, the Contractor shall furnish an acceptable final plan not later than 30 calendar days after receipt of the Notice to Proceed. The Contractor shall meet with representatives of the Contracting Officer to develop a mutual understanding relative to compliance with this section and administration of the environmental pollution control program. Acceptance is conditional and is predicated upon satisfactory performance during construction. The Government reserves the right to require the Contractor to make changes in the Environmental Protection Plan or operations if the Contracting Officer determines that environmental protection requirements are not being met. The plan shall detail the actions that the Contractor shall take to comply with all applicable Federal, State, and local laws and regulations concerning environmental protection and pollution control and abatement, as well as the additional specific requirements of this contract. No physical work at the site shall begin prior to acceptance of the Contractor's plan or an interim plan covering the work to be performed. The environmental protection plan

shall include, but not be limited to, the following:

1.5.1 List of State and Local Laws and Regulations. The Contractor shall provide as part of the Environmental Protection Plan a list of all State and local environmental laws and regulations, which apply to the construction operations under the Contract.

1.5.2 Spill Control Plan. The Contractor shall include as part of the environmental protection plan, a Spill Control Plan. The plan shall include the procedures, instructions, and reports to be used in the event of an unforeseen spill of a substance regulated by the Emergency Response and Community Right-to-Know Act or regulated under State or local laws or regulations. The Spill Control Plan supplements the requirements of EM 385-1-1. This plan shall include as a minimum:

a. The name of the individual who will be responsible for implementing and supervising the containment and cleanup.

b. Training requirements for Contractor's personnel and methods of accomplishing the training.

c. A list of materials and equipment to be immediately available at the job site, tailored to cleanup work of the potential hazard(s) identified.

d. The names and locations of suppliers of containment materials and locations of additional fuel oil recovery, cleanup, restoration, and material-placement equipment available in case of an unforeseen spill emergency.

e. The methods and procedures to be used for expeditious contaminant cleanup.

f. The name of the individual who will report any spills or hazardous substance releases and who will follow up with complete documentation. This individual shall immediately notify the Contracting Officer in addition to the legally required Federal, State, and local reporting channels (including the National Response Center 1-800-424-8802) if a reportable quantity spill occurs. The plan shall contain a list of the required reporting channels and telephone numbers.

1.5.3 Recycling and Waste Minimization Plan. The Contractor shall submit a Recycling and Waste Minimization Plan as a part of the Environmental Protection Plan. The plan shall detail the Contractor's actions to comply with the following recycling and waste minimization requirements:

a. The Contractor shall participate in State and local Government sponsored recycling programs to reduce the volume of solid waste materials at the source;

b. Recovery of metal from debris and sale to recycling operation with Contractor retaining any money derived from sale;

c. Collection of aluminum cans at the site for recycling.

1.5.4 Contaminant Prevention Plan. As a part of the Environmental Protection Plan, the Contractor shall prepare a contaminant prevention statement identifying potentially hazardous substances to be used on the job site and intended actions to prevent accidental or intentional introduction of such materials into the air, water, or ground. The Contractor shall detail provisions to be taken to meet Federal, State, and local laws and regulations regarding the storage and handling of these materials.

1.5.5 Storm Water Pollution Prevention Plan (SWPPP). As a part of the Environmental Protection Plan, the Contractor shall prepare a Storm Water Pollution Protection Plan to ensure the design, implementation, management, and maintenance of Best Management Practices (BMP) in order to reduce the amount of sediment and other pollutants in storm water discharges associated with the land disturbance activities; comply with the Water Quality Standards of the state in which the construction activities take place. The SWPPP also ensures compliance with the terms and conditions of the Land Disturbance Permit. Reference Section 00800 Special Clauses.

1.5.6 Environmental Monitoring. The Contractor shall include in the plan the details of environmental monitoring requirements under the laws and regulations and a description of how this monitoring will be accomplished.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 SPECIAL ENVIRONMENTAL PROTECTION REQUIREMENTS.

3.1.1 Tree Protection. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized by the Contracting Officer. Where such special use is permitted, the Contractor shall provide effective protection to prevent damage to the trees and other land and vegetative resources. Unless specifically authorized by the Contracting Officer, no construction equipment or materials shall be placed or used within the dripline of trees shown on the drawings to be saved. No excavation or fill shall be permitted within the dripline of trees to be saved except as shown on the drawings.

3.1.2 U.S. Department of Agriculture (USDA) Quarantined Considerations. The Contractor shall thoroughly clean all construction equipment at the prior job site in a manner that ensures all residual soil is removed and that egg deposits from plant pests are not present. The Contractor shall consult with the USDA Plant Protection and Quarantine (USDA - PPQ) jurisdictional office for additional cleaning requirements that may be necessary.

3.1.3 Commercial Borrow. Prior to bringing commercially obtained borrow material onsite, the Contractor shall provide the Contracting Officer

with the location of the borrow areas, the names of the owners and operators, and the types and estimated quantities of materials to be obtained from each source.

3.1.4 Disposal of Solid Wastes. Solid waste is rubbish, debris, waste materials, garbage, and other discarded solid materials (excluding clearing debris and hazardous waste as defined in following paragraphs). Solid waste shall be placed in containers and disposed of on a regular schedule. All handling and disposal shall be conducted in such a way as to prevent spillage and contamination. The Contractor shall transport all solid waste off site and dispose of it in compliance with Federal, State, and local requirements. The Contractor shall comply with Federal, State, and local laws and regulations pertaining to the use of the landfill area.

3.1.5 Disposal of Contractor Generated Hazardous Wastes. Hazardous wastes are hazardous substances as defined in 40 CFR 261, or as defined by applicable State and local regulations. Hazardous waste generated by construction activities shall be removed from the work area and be disposed of in compliance with Federal, State, and local requirements. The Contractor shall segregate hazardous waste from other materials and wastes, and shall protect it from the weather by placing it in a safe covered location; precautionary measures against accidental spillage such as berming or other appropriate measures shall be taken. Hazardous waste shall be removed from the project site within 60 days. Hazardous waste shall not be dumped onto the ground, into storm sewers or open water courses, or into the sanitary sewer system.

3.1.6 Fuels and Lubricants. Fueling and lubrication of equipment and motor vehicles shall be conducted in a manner that affords the maximum protection against spills and evaporation. Lubricants and waste oil to be discarded shall be stored in marked corrosion-resistant containers and recycled or disposed of in accordance with Federal, State, and local laws and regulations.

3.1.7 Nuclear Density Meters. The Contractor shall adhere to the requirements of ER 385-1-80 when in possession of nuclear density meters.

3.2 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES.

3.2.1 Discovered Historic, Archaeological, and Cultural Resources. If during construction activities, items are observed that may have historic or archaeological value (e.g., Native American human remains or associated objects are discovered), such observations shall be reported immediately to the Contracting Officer so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. The Contractor shall cease all activities that may result in impact to or the destruction of these resources. The Contractor shall prevent its employees from trespassing on, removing, or otherwise disturbing such resources.

3.3 PROTECTION OF WATER RESOURCES. The Contractor shall keep construction activities under surveillance, management, and control to avoid

pollution of surface and ground waters.

3.3.1 Wastewater. Wastewater directly derived from concrete construction activities shall not be discharged before being treated to remove pollutants.

3.4 PROTECTION OF FISH AND WILDLIFE RESOURCES. The Contractor shall keep construction activities under surveillance, management and control to minimize interference with, disturbance to, and damage of, fish and wildlife.

3.5 PROTECTION OF AIR RESOURCES. Special management techniques as set out below shall be implemented to control air pollution by the construction activities. These techniques supplement the requirements of Federal, State, and local laws and regulations; and the safety requirements under this Contract. If any of the following techniques conflict with the requirements of Federal, State, or local laws or regulations, or safety requirements under this contract, then those requirements shall be followed in lieu of the following.

3.5.1 Particulates. Airborne particulates, including dust particles, from construction activities and processing and preparation of materials shall be controlled at all times, including weekends, holidays, and hours when work is not in progress. The Contractor shall maintain all excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, disposal sites, borrow areas, and all other work areas free from airborne dust which would cause a hazard or nuisance.

3.5.2 Other Air Pollutants.

3.5.2.1 Hydrocarbons and Carbon Monoxide. Hydrocarbons and carbon monoxide emissions from equipment shall be controlled to Federal and State allowable limits at all times.

3.5.2.2 Odors. Odors shall be controlled at all times for all construction activities, processing and preparation of materials.

3.6 INSPECTION. If the Contracting Officer notifies the Contractor in writing of any observed noncompliance with contract requirements or Federal, State, or local laws, regulations, or permits, the Contractor shall inform the Contracting Officer of proposed corrective action and take such action to correct the noncompliance. If the Contractor fails to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action is taken. No time extensions will be granted or costs or damages allowed to the Contractor for any such suspension.

3.7 MAINTENANCE OF POLLUTION CONTROL FACILITIES. The Contractor shall maintain all constructed pollution control facilities and portable pollution control devices for the duration of the Contract or for the length of time construction activities create the particular pollutant.

3.8 TRAINING OF CONTRACTOR PERSONNEL. Contractor personnel shall be trained in environmental protection and pollution control. The Contractor

shall conduct environmental protection/pollution control meetings for all Contractor personnel monthly. The training and meeting agenda shall include methods of detecting and avoiding pollution, familiarization with pollution standards, both statutory and contractual, installation and care of facilities (vegetative covers, etc.), and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control. Anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants, shall also be discussed. Other items to be discussed shall include recognition and protection of archaeologic sites and artifacts.

3.9 EROSION CONTROL.

3.9.1 Unprotected Erodible Soils. Earthwork brought to final grade shall be finished as indicated. Side slopes and back slopes shall be protected as soon as practicable upon completion of rough grading. All earthwork shall be planned and conducted to minimize the duration of exposure of unprotected soils. Except in cases where the constructed feature obscures borrow areas, quarries, and waste material areas, these areas shall not initially be totally cleared. Clearing of such areas shall progress in reasonably sized increments as needed to use the developed areas as approved by the Contracting Officer.

3.9.2 Disturbed Areas. The Contractor shall effectively prevent erosion and control sedimentation through approved methods including, but not limited to, the following:

a. Retardation and Control of Runoff. Runoff from the construction site or from storms shall be controlled, retarded, and diverted to protected drainage courses by means of diversion ditches, benches, berms, and by any measures required by area wide plans under the Clean Water Act.

b. Erosion and Sedimentation Control Devices. The Contractor shall construct or install temporary and permanent erosion and sedimentation control features as indicated in the Contractor Environmental Protection Plan or as indicated on the drawings. Berms, dikes, drains, grassing, and mulching shall be maintained until permanent drainage and erosion control facilities are completed and operative.

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SECTION 01300 - SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SUBMITTAL CLASSIFICATION. Submittals are classified as follows:

1.1.1 Government Approved (GA). Governmental approval is required for extensions of design, critical materials, deviations, equipment whose compatibility with the entire system must be checked, and other items as designated by the Contracting Officer. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction," they are considered to be "shop drawings."

1.1.2 For Information Only (FIO). All submittals not requiring Government approval will be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above. These submittals shall be filed and maintained in the Contractor's field office subject to Government spot check.

1.2 APPROVED SUBMITTALS. The Contracting Officer's approval of submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory. Approval will not relieve the Contractor of the responsibility for any error that may exist, as the Contractor under the CQC requirements of this contract is responsible for dimensions, the design of adequate connections and details, and the satisfactory construction of all work. After the Contracting Officer has approved submittals, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.3 DISAPPROVED SUBMITTALS. The Contractor shall make all corrections required by the Contracting Officer and promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, a notice in accordance with the Contract Clause "Changes" shall be furnished promptly to the Contracting Officer.

1.4 WITHHOLDING OF PAYMENT. Payment for materials incorporated in the work will not be made if required approvals have not been obtained. In addition; the Government will withhold 2% of the total bid price of the applicable item for which FIO technical submittals are not being maintained and on file at the Contractor's Field Office.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL. The Contractor shall make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to the

submission of submittals for both the Government Approval (GA) and For Information Only (FIO), all items shall be checked and approved by the Contractor's Quality Control (CQC) representative and each item shall be stamped, signed, and dated by the CQC representative indicating action taken.

Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

3.2 SUBMITTAL REGISTER (ENG FORM 4288-R). At the end of this section is one set of ENG Form 4288-R listing items of equipment and materials for which submittals are required by the specifications; this list may not be all inclusive and additional submittals may be required. The Accident Prevention Program (00800-14), Statement of Required Insurance (00800-19), Environmental Protection Plan (01130-1.5) and Quality Control Plan (01440-3.2), shall be submitted as set forth in each applicable specification paragraph and should not be included as part of the Submittal Register ENG Form 4288-R. The Government has completed columns "d" through "r"; the Contractor shall complete columns "a" through "c" and "s" through "u" and submit the forms to the Contracting Officer for approval within 10 calendar days after Notice to Proceed. The approved submittal register will become the scheduling document and will be used to control submittals throughout the life of the contract. The submittal register and the progress schedules shall be coordinated. The time for submission, procurement, lag/lead and delivery shall be entered through the Resident Management System (RMS) QC module. After entry of that data, the ENG Form 4288-R (RMS) shall be produced from the RMS QC module.

3.3 SCHEDULING. Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. It is the Contractor's responsibility to provide the Corps with timely, accurate, and complete submittal packages. The Corps, in turn, will process, review, and provide official responses to the Contractor within 30 calendar days after physical receipt of the submittal, unless otherwise noted in the Technical Provisions. The Contractor shall incorporate the stated Government review time in the submittal register. No delay damages or time extensions will be allowed for time lost in late submittals. The Contractor's Quality Control representative shall review the listing at least every 60 days and take appropriate action to maintain an effective system. Copies of updated or corrected listing shall be submitted to the Contracting Officer at least every 30 days in the quantity specified.

3.4 TRANSMITTAL FORM (ENG FORM 4025-R). The sample transmittal form (ENG Form 4025-R), attached to this section, shall be used for submitting Government Approved submittals in accordance with the instructions on the reverse side of the form. This form should also be used to document the Contractor Quality Control review, and approval of, For Information Only submittals prior to filing and maintaining in the field office. These forms will be furnished to the Contractor. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted.

Special care shall be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data

submitted for each item. The ENG Form 4025-R may be prepared by use of the Resident Management System (RMS) QC module.

3.5 SUBMITTAL PROCEDURE. Submittals shall be made as follows:

3.5.1 Procedures. The Contractor shall submit to the Contracting Officer for approval six copies of all shop drawings as called for under the various headings of these specifications.

3.5.2 Deviations. For submittals, which include proposed deviations requested by the Contractor, the column "variation" of ENG Form 4025-R shall be checked. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

3.6 CONTROL OF SUBMITTALS. The Contractor shall carefully control its procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

3.7 GOVERNMENT APPROVED SUBMITTALS. Upon completion of review of submittals requiring Government approval, the submittals will be identified as having received approval by being so stamped and dated. The Contracting Officer will retain five copies of the submittal and one copy of the submittal will be returned to the Contractor.

3.8 INFORMATION ONLY SUBMITTALS. Approval of the Contracting Officer is not required on information only submittals. The Contractor shall maintain in his field office all current FIO submittals for use by CQC Manager during the course of the contract. The Government will periodically spot-check the Contractor's compliance with maintaining current and correct FIO submittals for CQC purposes. Any incorrect submittals found during the Government spot check will be immediately corrected by the CQC Manager. If the Contractor fails to keep the FIO submittals current and correct, 2% of the total bid price against the applicable bid item will be withheld. At the completion of the contract, the Contractor will submit the entire file of FIO submittals to the Government.

3.9 STAMPS. Stamps used by the Contractor on the submittal data to certify that the submittal meets contract requirements shall be similar to the following:

CONTRACTOR (Firm Name)	
_____	Approved
_____	Approved with corrections as noted on submittal data and/or attached sheets(s).
SIGNATURE: _____	
TITLE: _____	
DATE: _____	

3.10 SUBMITTALS REQUIRED WITHIN 15 DAYS AFTER RECEIPT OF NOTICE OF AWARD.

<u>Specification Section/Para No.</u>	<u>Description of Submittal</u>
00800-14	ACCIDENT PREVENTION PROGRAM
00800-19	STATEMENT OF REQUIRED INSURANCE
01320-3.4	Project Schedule Submissions
01440-3.2	QUALITY CONTROL PLAN

xxx

TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE <small>(Read instructions on the reverse side prior to initiating this form)</small>						DATE	TRANSMITTAL NO.		
SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS <small>(This section will be initiated by the contractor)</small>									
TO:		FROM:		CONTRACT NO.		CHECK ONE: <input type="checkbox"/> THIS IS A NEW TRANSMITTAL <input type="checkbox"/> THIS IS A RESUBMITTAL OF TRANSMITTAL _____			
SPECIFICATION SEC. NO. <small>(Cover only one section with each transmittal)</small>		PROJECT TITLE AND LOCATION		CHECK ONE: THIS TRANSMITTAL IS FOR <input type="checkbox"/> FID <input type="checkbox"/> GOV'T. APPROVAL					
ITEM NO.	DESCRIPTION OF ITEM SUBMITTED <small>(Type size, model number/etc.)</small>	MFG OR CONTR. CAT., CURVE DRAWING OR BROCHURE NO. <small>(See instruction no. 8)</small>	NO. OF COPIES	CONTRACT REFERENCE DOCUMENT		FOR CONTRACTOR USE CODE	VARIATION <small>(See instruction No. 6)</small>	FOR CE USE CODE	
				SPEC. PARA. NO.	DRAWING SHEET NO.				
a.	b.	c.	d.	e.	f.	g.	h.	i.	
REMARKS				I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as other wise stated.					
NAME AND SIGNATURE OF CONTRACTOR									
SECTION II - APPROVAL ACTION									
ENCLOSURES RETURNED <small>(List by Item No.)</small>				NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY				DATE	
ENG FORM 4025-R, MAR 95				(IFR 415-1-10)				EDITION OF SEP 93 IS OBSOLETE.	SHEET ____ OF ____ (Prepared: CEMP-CE)

INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.
2. Each transmittal shall be numbered consecutively in the space provided for "Transmittal No.". This number, in addition to the contract number, will form a serial number for identifying each submittal. For new submittals or resubmittals mark the appropriate box; on resubmittals, insert transmittal number of last submission as well as the new submittal number.
3. The "Item No." will be the same "Item No." as indicated on ENG FORM 4288-R for each entry on this form.
4. Submittals requiring expeditious handling will be submitted on a separate form.
5. Separate transmittal form will be used for submittals under separate sections of the specifications.
6. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications--also, a written statement to that effect shall be included in the space provided for "Remarks".
7. Form is self-transmittal, letter of transmittal is not required.
8. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certificate" in column c, Section I.
9. U.S. Army Corps of Engineers approving authority will assign action codes as indicated below in space provided in Section I, column i to each item submitted. In addition they will ensure enclosures are indicated and attached to the form prior to return to the contractor. The Contractor will assign action codes as indicated below in Section I, column g, to each item submitted.

THE FOLLOWING ACTION CODES ARE GIVEN TO ITEMS SUBMITTED

A --	Approved as submitted.	E --	Disapproved (See attached).
B --	Approved, except as noted on drawings.	F --	Receipt acknowledged.
C --	Approved, except as noted on drawings. Refer to attached sheet resubmission required.	FX --	Receipt acknowledged, does not comply as noted with contract requirements.
D --	Will be returned by separate correspondence.	G --	Other (Specify)

10. Approval of items does not relieve the contractor from complying with all the requirements of the contract plans and specifications.

(Reverse of ENG Form 4025-R)

(1-03)																	SUBMITTAL REGISTER (ER 415-1-10)										CONTRACT NO.	
REND CITY WETLANDS																	CONTRACTOR										SPECIFICATION SE	
ACTIVITY NO	TRANS-MITTAL NO.	ITEM NO	SPECIFICATION PARAGRAPH NUMBER	DESCRIPTION OF ITEM SUBMITTED	TYPE OF SUBMITTAL												CLASSI-FICATION	REVIEWER	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION			GOVERNMENT ACTION			
					D A T A	D R A W I N G S	I N S T R U C T I O N S	S C H E D U L E S	S T A T E M E N T S	R E P O R T S	C E R T I F I C A T E S	S A M P L E S	R E C O R D S	O & M A N U A L S	I N F O R M A T I O N L Y	G O V E R N M E N T			S U B M I T	A P P R O V A L N E E D E D B Y	M A T E R I A L N E E D E D B Y	C O D E	D A T E	S U B M I T T O G O V E R N M E N T	C O D E	D A T E		
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.	r.	s.	t.	u.	v.	w.	x.	y.	z.			
				BORROW AREA EXCAVATION PLAN					X							X												
			02220-1.3.1	MECHANICAL DREDGING EQUIPMENT	X											X												
			02220-1.3.2.1	INLET STRUCTURE TEMP COFFERDAM	X											X												
			02221-1.3.1	SOIL TEST RESULTS						X						X												
			02221-1.3.2	SOIL TESTING LAB	X						X					X												
			02221-1.3.3	EXCAVATION/BACKFILL PLAN					X							X												
			02221-1.3.4	CELLULAR CONFINEMENT SYS	X											X												
			02240-1.4.1	GEOTEXTILE CERTIFICATION							X					X												
			02270-1.4.1	SOURCE OF STONE					X							X												
			02270-1.4.2	GRADATION TEST DATA	X											X												
			02270-1.4.3	METHOD OF PLACEMENT					X							X												
			02610-1.4.1	CULVERT PIPE SHOP DRAWINGS		X										X												
			02610-1.4.2	PIPE CERTIFICATIONS							X					X												
			02900-1.5.1	SOIL TEST REPORTS						X						X												

SUBMITTAL REGISTER (ER 415-1-10)																		CONTRACT NO.							
REND CITY WETLANDS																		CONTRACTOR		SPECIFICATION SE					
ACTIVITY NO	TRANS-MITTAL NO.	ITEM NO	SPECIFICATION PARAGRAPH NUMBER	DESCRIPTION OF ITEM SUBMITTED	TYPE OF SUBMITTAL										CLASSI- FICATION	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION			GOVERNMENT ACTION			
					D A T A	D R A W I N G S	I N S T R U C T I O N S	S C H E D U L E S	S T A T E M E N T S	R E P O R T S	C E R T I F I C A T E S	S A M P L E S	R E C O R D S	O & M M A N U A L S		I N F O R M A T I O N L Y	G O V E R N M E N T	S U B M I T	A P P R O V A L N E E D E D B Y	M A T E R I A L N E E D E D B Y	C O D E	D A T E	S U B M I T T O G O V E R N M E N T	C O D E	D A T E
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.	r.	s.	t.	u.	v.	w.	x.	y.	z.
			03300-1.5.1	MATERIALS	X										X										
			03300-1.5.2	CONCRETE MIX PROPORTIONS					X							X									
			03300-1.5.3	CEMENTITIOUS AND AGGREGATE MATERIALS							X				X										
			03300-1.5.4	TEST PLAN					X							X									
			03300-1.5.5	EXPANSION JOINT FILLER, SEALANTS																					
			03300-1.5.6	SEALANT AND PRIMER								X			X										
			03410-1.3.1	DESIGN CALCS	X											X									
			03410-1.3.2	PRESTRESSED STRUCTURES		X										X									
			03410-1.3.3	FABRICATION					X						X										
			03410-1.3.4	CONCRETE						X					X										
			03410-1.3.5	CONCRETE MATERIALS							X				X										
			15100-1.4.1	DESIGN DATA	X											X									
			15100-1.4.2	SHOP DRAWINGS		X										X									
			15100-1.4.3	MANUALS										X	X										
			15100-1.4.4	STORAGE					X						X										
			15200-1.4.1	SHOP DRAWINGS		X										X									
			15200-1.4.2	O&M MANUALS										X	X										

SUBMITTAL REGISTER (ER 415-1-10)																		CONTRACT NO.								
REND CITY WETLANDS																		CONTRACTOR		SPECIFICATION SE						
ACTIVITY NO	TRANS-MITTAL NO.	ITEM NO	SPECIFICATION PARAGRAPH NUMBER	DESCRIPTION OF ITEM SUBMITTED	TYPE OF SUBMITTAL													CLASSI- FICATION	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION			GOVERNMENT ACTION	
					D A T A	D R A W I N G S	I N S T R U C T I O N S	S C H E D U L E S	S T A T E M E N T S	R E P O R T S	C E R T I F I C A T E S	S A M P L E S	R E C O R D S	O & M A N U A L S	I N F O R M A T I O N L Y	G O V E R N M E N T	S U B M I T T E D		S U B M I T T E D	S U B M I T T E D	S U B M I T T E D	S U B M I T T E D	S U B M I T T E D			
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.	r.	s.	t.	u.	v.	w.	x.	y.	z.	
			02840-1.3.1.1	DETAIL DRAWINGS		X									X											
			02840-1.3.1.2	STAFF GAGES		X									X											
			02840-1.3.2.1	MANUFACTURERS LITERATURE	X											X										
			02840-1.3.2.2	CONCRETE	X											X										
			02840-1.3.3.1	MATERIALS ORDERS				X							X											
			02840-1.3.3.2	MATERIALS LIST				X								X										
			02840-1.3.3.3	SHIPPING BILL				X							X											
			16400-1.3	CABLE		X										X										
			02315-1.4.1	COMPACTION					X						X											
			02315-1.4.2	EQUIPMENT					X							X										

SECTION

REMARKS

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SECTION

REMARKS

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REMARKS

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SECTION 01320
PROJECT SCHEDULE

PART 1 - GENERAL

1.1 REFERENCES. The publications listed below form a part of the specification to the extent referenced. The publications are referenced in the text by basic designation only.

ENGINEERING REGULATIONS (ER)

ER 1-1-11(1995)	Progress, Schedules, and Network Analysis Systems
-----------------	--

1.2 QUALIFICATIONS. The Contractor shall designate an authorized representative who shall be responsible for the preparation of all required project schedule reports.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION.

3.1 GENERAL REQUIREMENTS. Pursuant to the Contract Clause, SCHEDULE FOR CONSTRUCTION CONTRACTS, a Project Schedule as described below shall be prepared. The scheduling of construction shall be the responsibility of the Contractor. Contractor management personnel shall actively participate in its development. Subcontractors and suppliers working on the project shall also contribute in developing and maintaining an accurate Project Schedule. The approved Project Schedule shall be used to measure the progress of the work, to aid in evaluating time extensions, and to provide the basis of all progress payments.

3.2 BASIS FOR PAYMENT. The schedule shall be the basis for measuring Contractor progress. Lack of an approved schedule or scheduling personnel will result in an inability of the Contracting Officer to evaluate the Contractor's progress for the purposes of payment. Failure of the Contractor to provide all information, as specified below, shall result in the disapproval of the entire Project Schedule submission and the inability of the Contracting Officer to evaluate Contractor progress for payment purposes. In the case where Project Schedule revisions have been directed by the Contracting Officer, and those revisions have not been included in the Project Schedule, the Contracting Officer may hold retainage up to the maximum allowed by contract, each payment period, until revisions to the Project Schedule have been made.

3.3 PROJECT SCHEDULE. The Project Schedule shall be submitted to the Contracting Officer within 10 days of Notice to Proceed. The schedule shall contain sufficient detail to show the order in which the Contractor proposes to perform the work and shall contain the following features as a minimum:

- A separate activity bar shall be created for each of the salient features of work (including acquiring materials, plant, equipment, mobilization, and demobilization)

- The start date, completion date, and scheduled percentage complete per month shall be indicated for each activity.
- The start date for the contract, which is the date of Notice to Proceed, any contract required interim completion dates, and the required completion date shall be indicated on the schedule and all time between said dates shall be accounted for on the schedule.
- The associated contract pay item (CLIN, Contract Line Item Number) shall be indicated for each activity. In addition, the dollar amount for each activity shall be indicated.
- A contract earnings schedule shall be included with the Project Schedule indicating the scheduled earnings per month and cumulative earnings through the duration of the contract.

3.3.1 Schedule Updates. The Contractor shall enter the actual progress on the approved progress schedule at least every 60 days and shall submit this annotated schedule to the Contracting Officer. If, in the opinion of the Contracting Officer, the Contractor falls behind the approved schedule, the Contractor shall take steps necessary to improve its progress, including those that may be required by the Contracting Officer, without additional cost to the Government. In this circumstance, the Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval a supplementary schedule or schedules in chart form as the Contracting Officer deems necessary to demonstrate how the approved rate of progress will be regained.

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SECTION 01440 - CONTRACTOR QUALITY CONTROL

PART 1 - GENERAL

1.1 REFERENCES. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

1.1.1 American Society for Testing and Materials (ASTM).

ASTM D 3740 (1996)	Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
--------------------	--

ASTM E 329 (1998)	Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction
-------------------	---

1.2 PAYMENT. Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices or lump-sum prices contained in the Bidding Schedule.

PART 2 - PRODUCTS. (Not Applicable)

PART 3 - EXECUTION

3.1 GENERAL. The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause entitled "Inspection of Construction." The quality control system shall consist of plans, procedures, and organization necessary to produce an end product that complies with the contract requirements. The system shall cover all construction operations, both on-site and off-site, and shall be keyed to the proposed construction sequence.

3.2 QUALITY CONTROL PLAN.

3.2.1 General. The Government will consider an interim plan for the first 60 days of operation to be submitted no later than 15 days after receipt of Notice of Award. Subsequent to submittal of an interim plan, the Contractor shall furnish for acceptance by the Government, not later than 35 days after receipt of Notice of Award, the original and one copy of the total Contractor Quality Control (CQC) Plan proposed for use in implementing the requirements of the Contract Clause entitled "Inspection of Construction". If an interim plan is not submitted, the Contractor shall submit for approval within 15 days after receipt of Notice of Award, the total Quality Control Plan specified above. The plan shall identify personnel, procedures, control, instructions, test, records, and forms to be used. Construction will be permitted to begin only after acceptance of the CQC Plan.

3.2.2 Content of the CQC Plan. The CQC plan shall include, as a minimum, the following to cover all construction operations, both on-site and off-site, including work by subcontractors, fabricators, suppliers, and purchasing agents:

a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC system manager who shall report to the project manager or someone higher in the Contractor's organization. Project Manager in this context shall mean the individual with responsibility for the overall management of the project including quality and production.

b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.

c. The name and address of the Corps of Engineers validated commercial testing laboratory to be used for quality control testing; a letter of validation from the Material Testing Center (MTC); a list of applicable ASTM procedures that the laboratory is validated to perform; and the qualifications of the field technician(s) identified for the project.

d. A copy of the letter to the CQC System Manager signed by an authorized official of the firm, which describes the responsibilities and delegates the authorities of the CQC System Manager.

e. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, off-site fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with SECTION 01300 - SUBMITTAL PROCEDURES.

f. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities will be approved by the Contracting Officer.)

g. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.

h. Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected.

i. Reporting procedures, including proposed reporting formats.

j. A list of the definable features of work. A definable feature of work is a task that is separate and distinct from other tasks and has separate control requirements. It could be identified by different trades or disciplines, or it could be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable feature under a particular section. This list shall be agreed upon during the coordination meeting.

3.2.3 Acceptance of Plan. Acceptance of the Contractor's plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Government reserves the right to require the Contractor to make changes in the CQC plan and operations including removal of personnel, as necessary, to obtain the quality specified.

3.2.4 Notification of Changes. After acceptance of the QC plan, the Contractor shall notify the Contracting Officer in writing a minimum of seven calendar days prior to any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

3.3 COORDINATION MEETING. After the Preconstruction Conference, before start of construction, and prior to acceptance by the Government of the Quality Control Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both on-site and off-site work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.4 QUALITY CONTROL ORGANIZATION. The Contractor shall identify an individual within its organization at the worksite who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. This CQC System Manager shall be on the site at all times during construction and shall be employed by the Contractor. This Contractor Quality Control System Manager shall be Corps' certified and shall be approved by the Contracting Officer. To become "certified" the manager must have completed the course entitled "Construction Quality Management for Contractors". This course is offered quarterly at the St. Louis Corps of Engineers District Office. An alternate for the CQC System Manager shall be identified in the plan to serve in the event of the System Manager's absence. Period of absence may not exceed one (1) week at any one time, and not more than ten (10) workdays during a calendar year. The requirements for the alternate will be the same as for the designated CQC Manager.

3.4.1 CQC Organizational Staffing. The Contractor shall provide a CQC staff, which shall be at the worksite at all times during progress, with complete authority to take any action necessary to ensure compliance with the contract.

3.4.1.1 CQC Staff. Following are the minimum requirements for the CQC staff. These minimum requirements will not necessarily assure an adequate staff to meet the CQC requirements at all times during construction. The actual strength of the CQC staff may vary during any specific work period to cover the needs of the work period. When necessary for a proper CQC organization, the Contractor shall add additional staff at no cost to the Government. This listing of minimum staff in no way relieves the Contractor of meeting the basic requirements of quality construction in accordance with contract requirements. All CQC staff members shall be certified in accordance with paragraph 01440-3.4 QUALITY CONTROL ORGANIZATION, and shall be subject to acceptance by the Contracting Officer.

3.4.1.2 CQC System Manager. The CQC System Manager and staff shall be assigned no scheduling or other duties.

3.4.2 Organizational Changes. The Contractor shall obtain Contracting Officer's acceptance before replacing any member of the CQC staff. Requests

shall include the names, qualifications, duties, and responsibilities of each proposed replacement.

3.5 SUBMITTALS. Submittals shall be made as specified in SECTION 01300 - SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals are in compliance with the contract requirements.

3.6 CONTROL. The controls shall include at least three phases of control to be conducted by the CQC System Manager for all definable features of work, as follows:

3.6.1 Preparatory Phase. This phase shall be performed prior to beginning work on each definable feature of work and shall include:

- a. A review of each paragraph of applicable specifications.
- b. A review of the contract drawings.
- c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.
- d. A check to assure that provisions have been made to provide required control inspection and testing.
- e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.
- f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.
- g. A review of the appropriate activity hazard analysis to assure safety requirements are met.
- h. Discussion of procedures for constructing the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that phase of work.
- i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.
- j. The Government shall be notified at least 24 hours in advance of beginning any of the required action of the preparatory phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

3.6.2 Initial Phase. This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

- a. A check of preliminary work to ensure that it is in compliance with contract requirements. Review minutes of the preparatory meeting.

b. Verification of full contract compliance. Verify required control inspection and testing.

c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Comparison with sample panels is appropriate.

d. Resolve all differences.

e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.

f. The Government shall be notified at least (24) hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.

g. The initial phase should be repeated for each new crew to work on-site, or any time acceptable specified quality standards are not being met.

3.6.3 Follow-up Phase. Daily checks shall be performed to assure continuing compliance with contract requirements, including control testing, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon or conceal non-conforming work.

3.6.4 Additional Preparatory and Initial Phases. As determined by the Government, additional preparatory and initial phases may be conducted on the same definable features of work if the quality of on-going work is unacceptable, if there are changes in the applicable CQC staff, on-site production supervision or work crew, if work on a definable feature is resumed after a substantial period of inactivity, or if other problems develop.

3.7 TESTS.

3.7.1 Materials Testing and Inspection. Testing shall be the responsibility of the Contractor and shall be performed at no additional cost to the Government. All testing shall be performed by a Corps of Engineers validated commercial testing laboratory. Both the field and permanent laboratory shall be validated. A list of current validated testing laboratories can be viewed at www.wes.army.mil/SL/MTC/mtc.htm or you may contact Mr. Steve O'Connor, St. Louis District, Geotechnical Branch, at Telephone 314-331-8425 for laboratory verifications. If the Contractor elects to establish testing facilities, work requiring testing will not be permitted until the Contractor's facilities have been validated by the Materials Testing Center. The Contractor shall ensure that the Materials Testing Center is reimbursed for all costs regarding validation of testing laboratories pertaining to this contract.

3.7.2 Testing Procedure. The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product that conforms to contract requirements. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a testing laboratory on or off site that is validated by the

Material Testing Center (MTC) for the Corps of Engineers. The Contractor shall perform the following activities and record and provide the following data:

- a. Verify that testing procedures comply with contract requirements.
- b. Verify that facilities and testing equipment are available and comply with testing standards.
- c. Check test instrument calibration data against certified standards.
- d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
- e. Results of all tests taken, both passing and failing tests, shall be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test shall be given. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an off-site or commercial test facility shall be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

3.7.3 Testing Laboratories.

3.7.3.1 Capability Check. The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel shall meet criteria detailed in ASTM D 3740 and ASTM E 329, and shall be validated by the Corps of Engineers MTC.

3.7.3.2 Capability Recheck. If the selected laboratory fails the capability check, the Contractor will be assessed any charges incurred to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

3.7.4 On-Site Laboratory. If an onsite CQC laboratory is established, the Contractor shall submit the request for validation to the District POC in a timely manner and emphasize the critical need. After the request to the MTC is submitted, the Contractor should anticipate a six-week turn around and reflect the turn-around time in its scheduling. The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

3.7.5 Furnishing or Transportation of Samples for Testing. Costs incidental to the transportation of samples or materials shall be borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be delivered to the Corps of Engineers Division Laboratory, f.o.b., at the following address:

For delivery by mail:

For other deliveries:

US Army Engineer Research
and Development Center
P.O. Box 631
Vicksburg, MS 39181-0631

US Army Engineer Research
and Development Center
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Coordination for each specific test, exact delivery location, and dates shall be made through the Area Office.

3.8 COMPLETION INSPECTION. At the completion of all work or any increment thereof established by a completion time stated in the Contract Clause entitled "Commencement, Prosecution, and Completion of Work," or stated elsewhere in the specifications, the CQC System Manager shall conduct an inspection of the work and develop a "punch list" of items which do not conform to the approved drawings and specifications. Such a list of deficiencies shall be included in the CQC documentation, as required by paragraph DOCUMENTATION below, and shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected and so notify the Government. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time stated for completion of the entire work or any particular increment thereof if the project is divided into increments by separate completion dates.

3.9 DOCUMENTATION. The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on the form as produced through the Resident Management System (RMS) QC module that includes, as a minimum, the following information:

- a. Contractor/subcontractor and their area of responsibility.
- b. Operating plant/equipment with hours worked, idle, or down for repair.
- c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.
- d. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase should be identified (Preparatory, Initial, Follow-up). List deficiencies noted along with corrective action.
- e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
- f. Submittals reviewed, with contract reference, by whom, and action taken.
- g. Off-site surveillance activities, including actions taken.
- h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- i. Instructions given/received and conflicts in plans and/or

specifications.

j. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Government daily within 24 hours after the date(s) covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every seven days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

3.10 NOTIFICATION OF NONCOMPLIANCE. The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the worksite, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

3.11 IMPLEMENTATION OF GOVERNMENT RESIDENT MANAGEMENT SYSTEM (RMS) FOR CONTRACTOR QUALITY CONTROL OF CONTRACT.

3.11.1 General. The Government will use the Resident Management System (RMS) to assist in its monitoring and administration of this contract. The Contractor shall use the Government-furnished Contractor Quality Control (CQC) Programming Module to plan, schedule, and manage work during construction period of the project. This joint Government-Contractor use of RMS will facilitate electronic exchange of information and overall management of the contract. The CQC module will provide the Contractor with a means to input, track, and electronically share information with the Government in administration, finances, Quality Control, submittal monitoring, scheduling, and import/export of data.

3.11.1.1 RMS Windows Version. The Contractor shall use the Government-furnished Construction Contractor Module of RMS-Windows, referred to as RMS-QC (QC for Quality Control), to record, maintain, and submit information throughout the contract period. This can be downloaded at <http://24.221.12.75/qcs/04QCSUpdates.htm> and/or <http://24.221.12.75/qcs/default.html>. Minimum hardware requirements for RMS-QC include an IBM-compatible personal computer with 500 mhz Pentium processor, 128 plus MB RAM, 1GB minimum hard drive space, 3.5 inch high-density floppy drive, compact disk reader 8x speed or higher, color monitor, laser printer compatible with HP LaserJet III with minimum 4 MB installed memory, and connection to the Internet (minimum 56k BPS). Minimum software requirements include Electronic mail (E-mail) MAPI compatible; MS Windows 98, ME, NT or 2000; word processing software compatible with MS Word 97 or newer, Internet

browser that supports HTML 4.0 or higher; and virus protection software that is regularly upgraded with all issued manufacturer's updates throughout the life of the contract.

3.11.2 Quality Assurance Comments. During the course of the contract, the Contractor will receive various Quality Assurance comments from the Government that will reflect corrections needed to Contractor activities or reflect outstanding or future items needing the attention of the Contractor. The Contractor shall acknowledge receipt of these comments by specific number reference on its Daily CQC Report, and shall also reflect on its Daily CQC Report when these items are specifically completed or corrected to permit Government verification.

3.11.3 Contractor's Scheduling System. The Contractor's schedule system shall include, as specific and separate activities, all Preparatory Phase Meetings (inspections), all O&M Manuals and all Test Plans of Electrical and Mechanical Equipment or Systems that require validation testing or instructions to Government representatives.

01500.1

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SECTION 01500 - TEMPORARY CONSTRUCTION FACILITIES

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS. As soon as practicable, but not later than 15 days after the date established for commencement of work, the Contractor shall provide the temporary facilities specified herein. The temporary facilities shall be maintained by the Contractor during the life of the contract and upon completion and acceptance of the work shall be removed from the site of the work.

1.1.1 No Separate Payment. Payment for materials and equipment furnished under this section will not be paid for separately, and all costs in connection therewith shall be included in other items for which payment is provided.

1.2 APPLICABLE PUBLICATIONS. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

1.2.1 Engineering Manuals (EM).

EM 385-1-1	U.S. Army Corps of Engineers Safety and Health Requirements Manual
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1.2.2 Engineering Pamphlets (EP).

EP 310-1-6A	U.S. Army Corps of Engineers Sign Standards Manual, VOL 1, CH 1
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PART 2 PRODUCTS

2.1 TEMPORARY PROJECT AND SAFETY SIGNS. The Contractor shall furnish and erect one temporary project sign and one safety sign at the project site at the location designated by the Contracting Officer. The signs shall conform to the requirements of U.S. Army Corps of Engineers Sign Standard Manual EP-310.1-6a, Section 16 entitled, "Construction Project Signs", Pages 16.1 through 16.4, copies of which are enclosed at the end of this section. If sign is to be placed on a floating plant, it may be half sized. Information will be furnished by the Contracting Officer as to the location and wording of the signs.

2.2 TEMPORARY PROJECT SAFETY FENCING. The Contractor shall furnish and erect temporary project safety fencing as required by the Safety and Health Requirements Manual EM 385-1-1. The safety fencing shall be a high visibility orange color, HDPE open-weave pattern, a minimum of 42 inches high, supported and tightly secured to steel posts located on maximum 10 foot centers, constructed at the approved location. If required by the Safety Manual, fencing shall meet EPA's recommended recovered materials content levels of 60-100% for Postconsumer Content and 90-100% Total Recovered Materials Content.

PART 3 EXECUTION

3.1 HAUL ROADS. Whenever practical, one-way haul roads shall be used on this contract. Haul roads built and maintained for this work shall comply

with the following:

a. One-way haul roads for off-the-road equipment; e.g., belly dumps, scrapers, and off-the-road trucks, shall have a minimum usable width of 25 feet. One-way haul roads for over-the-road haulage equipment only (e.g., dump trucks, etc.) may be reduced to a usable width of 15 feet. When the Contracting Officer determines that it is impractical to obtain the required width for one-way haul roads (e.g., a road on top of a levee), a usable width not less than 10 feet may be approved by the Contracting Officer, provided a positive means of traffic control is implemented. Such positive means shall be signs, signals, and/or signalman and an effective means of speed control.

b. Two-way haul roads for off-the-road haulage equipment shall have a usable width of 60 feet. Two-way haul roads for over-the-road haulage equipment only may be reduced to a usable width of 30 feet.

c. Haul roads shall be graded and otherwise maintained to keep the surface free from potholes, ruts, and similar conditions that could result in unsafe operation.

d. Grades and curves shall allow a minimum sight distance of 200 feet for one-way roads and 300 feet for two-way roads. Sight distance is defined as the centerline distance an equipment operator (4.5 feet above the road surface) can see an object 4.5 feet above the road surface. When conditions make it impractical to obtain the required sight distance (e.g., ramps over levees), a positive means of traffic control shall be implemented.

e. Dust abatement shall permit observation of objects on the roadway at a minimum distance of 300 feet.

f. Haul roads shall have the edges of the usable portion marked with posts at intervals of 50 feet on curves and 200 feet maximum elsewhere. Such markers shall extend 6 feet above the road surface and, for nighttime haulage, be provided with reflectors in both directions.

3.2 CLEANUP. Construction debris, waste materials, packaging material and the like shall be removed from the work site daily. Any dirt or mud which is tracked onto paved or surfaced roadways shall be cleaned away as directed by the Contracting Officers Representative or designated Government Representative(s).

3.3 RESTORATION OF STORAGE AREA. Upon completion of the project, areas used by the Contractor for the storage of equipment or material, or other use, shall be restored to the original or better condition.

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The use of signs to identify Corps managed or supervised design, construction, and rehabilitation projects—both for military and civil works is an important part of efforts to keep the public informed of Corps work. For this purpose, a construction project sign package has been adopted. This package consists of two signs; one for project identification and the other to show on-the-job safety performance of the contractor.

These two signs are to be displayed side by side and mounted for reading by passing viewers. Exact placement location will be designated by the contracting officer.

The panel sizes and graphic formats have been standardized for visual consistency throughout all Corps operations.

Panels are fabricated using HDO plywood with dimensional lumber uprights and bracing. The sign faces are non-reflective vinyl.

All legend sare to be die-cut or computer-cut in the sizes and typefaces specified and applied to the white panel background following the graphic formats shown on pages 16.2-3. The Communications Red panel on the left side of the construction project sign with Corps signature (reverse version) is screen printed onto the white background.

A display of these two signs is shown on the following two pages. Mounting and fabrication details are provided on page 16.4.

Special applications or situations not covered in these guidelines should be referred to the District/Division sign coordinator.

Below are two samples of the construction project identification sign showing how this panel is adaptable for use to identify either military (top), or civil works projects (bottom). The graphic format for this 4' x 6' sign panel follows the legend guidelines and layout as specified below. The large

4' x 4' section of the panel on the right is to be white with black legend. The 2' x 4' section of the sign on the left with the full Corps signature (reverse version) is to be screen printed Communications Red on the white background.

This sign is to be placed with the Safety Performance Sign shown on the following

page. Mounting and fabrication details are provided on page 16.4.

Special applications or situations not covered in these guidelines should be referred to the District/Division sign coordinator.

Legend Group 1: One- to two-line description of Corps relationship to project.

Color: White

Typeface: 1.25" Helvetica Regular
Maximum line length: 19"

Legend Group 2: Division or District Name (optional). Placed below 10.5" Reverse Signature (6" Castle).

Color: White

Typeface: 1.25" Helvetica Regular

Legend Group 3: One- to three-line project title legend describes the work being done under this contract.

Color: Black

Typeface: 3" Helvetica Bold
Maximum line length: 42"

Legend Group 4: One- to two-line identification of project or facility (civil works) or name of sponsoring department (military).

Color: Black

Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

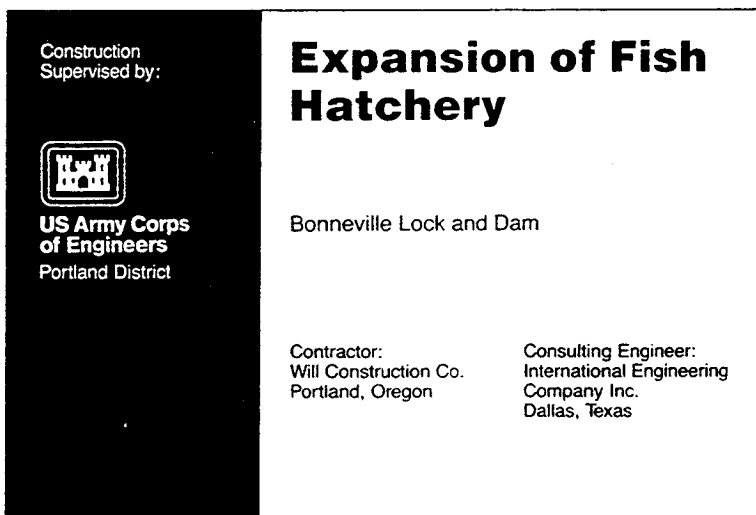
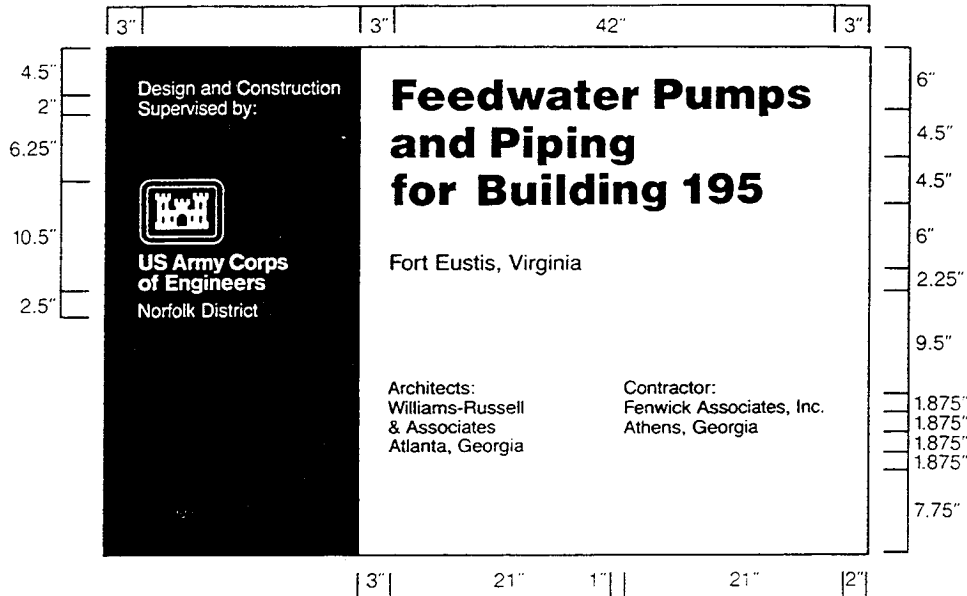
Cross-align the first line of Legend Group 4 with the first line of the Corps Signature (US Army Corps) as shown.

Legend Groups 5a-b: One- to five-line identification of prime contractors including: type (architect, general contractor, etc.), corporate or firm name, city, state. Use of Legend Group 5 is optional.

Color: Black

Typeface: 1.25" Helvetica Regular
Maximum line length: 21"

All typography is flush left and rag right, upper and lower case with initial capitals only as shown. Letter- and word-spacing to follow Corps standards as specified in Appendix D.



Sign Type	Legend Size	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
CID-01	various	4" x 6"	4" x 4"	HDO-3	48"	WH-RD/BK

Each contractor's safety record is to be posted on Corps managed or supervised construction projects and mounted with the construction project identification sign specified on page 16.2.

The graphic format, color, size and typefaces used on the sign are to be reproduced exactly as specified below. The title

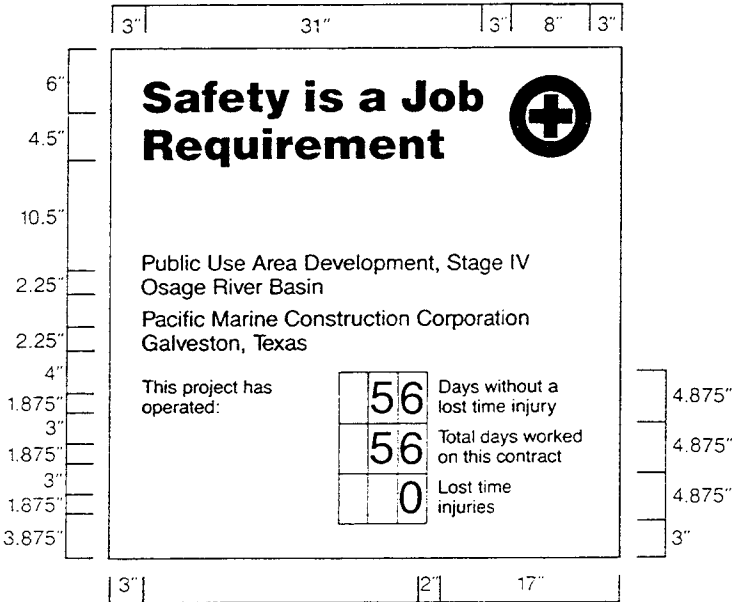
with First Aid logo in the top section of the sign, and the performance record captions are standard for all signs of this type. Legend Groups 2 and 3 below identify the project and the contractor and are to be placed on the sign as shown.

Safety record numbers are mounted on individual metal plates and are screw-mounted to the background to allow for

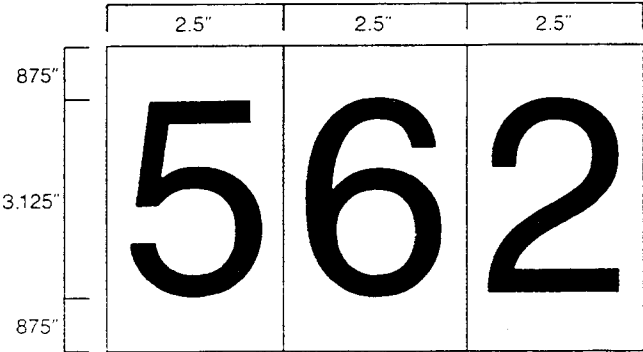
daily revisions to posted safety performance record.

Special applications or situations not covered in these guidelines should be referred to the District/Division sign coordinator.

- Legend Group 1: Standard two-line title "Safety is a Job Requirement", with (8" od.) Safety Green First Aid logo. Color: To match PMS 347 Typeface: 3" Helvetica Bold Color: Black
- Legend Group 2: One- to two-line project title legend describes the work being done under this contract and name of host project. Color: Black Typeface: 1.5" Helvetica Regular Maximum line length: 42"
- Legend Group 3: One- to two-line identification: name of prime contractor and city, state address. Color: Black Typeface: 1.5" Helvetica Regular Maximum line length: 42"
- Legend Group 4: Standard safety record captions as shown. Color: Black Typeface: 1.25" Helvetica Regular
- Replaceable numbers are to be mounted on white .060 aluminum plates and screw-mounted to background. Color: Black Typeface: 3" Helvetica Regular Plate size: 2.5" x .5"
- All typography is flush left and rag right, upper and lower case with initial capitals only as shown. Letter- and word-spacing to follow Corps standards as specified in Appendix D.



Sign Type	Legend Size	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
CID-02	various	4" x 4"	4" x 4"	HDO-3	48"	WH/BK-GR



All Construction Project Identification signs and Safety Performance signs are to be fabricated and installed as described below. The signs are to be erected at a location designated by the contracting officer and shall conform to the size, format, and typographic standards shown on

pages 16.2-3. Detailed specifications for HDO plywood panel preparation are provided in Appendix B.

Shown below the mounting diagram is a panel layout grid with spaces provided for project information. Photocopy this page and use as a worksheet when preparing sign legend orders.

For additional information on the proper method to prepare sign panel graphics, contact the District sign coordinator.

The sign panels are to be fabricated from .75" High Density Overlay Plywood. Panel preparation to follow HDO specifications provided in Appendix B.

Sign graphics to be prepared on a white non-reflective vinyl film with positionable adhesive backing.

All graphics except for the Communications Red background with Corps signature on the project sign are to be die-cut or computer-cut non-reflective vinyl, pre-spaced legends prepared in the sizes and typefaces specified and applied to the background panel following the graphic formats shown on pages 16.2-3.

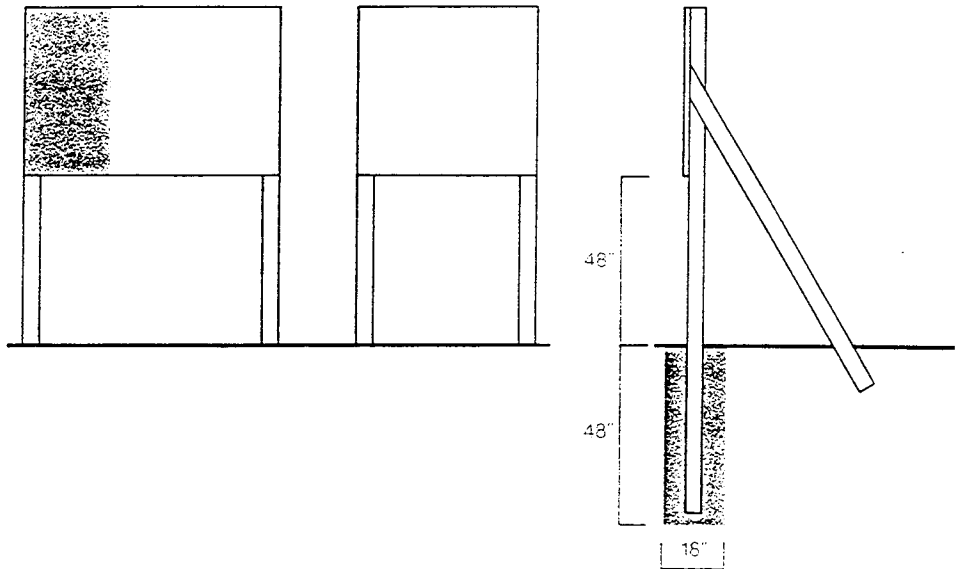
The 2' x 4' Communications Red panel (to match PMS-032) with full Corps signature (reverse version) is to be screen printed on the white background. Identification of the District or Division may be applied under the signature with white cut vinyl letters prepared to Corps standards. Large scale reproduction artwork for the signature is provided on page 4.8 (photographically enlarge from 6.875" to 10.5").

Drill and insert six (6) .375" T-nuts from the front face of the HDO sign panel. Position holes as shown. Flange of T-nut to be flush with sign face.

Apply graphic panel to prepared HDO plywood panel following manufacturers' instructions.

Sign uprights to be structural grade 4" x 4" treated Douglas Fir or Southern Yellow Pine, No.1 or better. Post to be 12' long. Drill six (6) .375" mounting holes in uprights to align with T-nuts in sign panel. Countersink (.5") back of hole to accept socket head cap screw (4" x .375").

Assemble sign panel and uprights. Imbed assembled sign panel and uprights in 4' hole. Local soil conditions and/or wind loading may require bolting additional 2" x 4" struts on inside face of uprights to reinforce installation as shown.



Construction Project Sign Legend Group 1: Corps Relationship

1. _____
2. _____

Legend Group 2: Division/District Name

1. _____
2. _____

Legend Group 3: Project Title

1. _____
2. _____
3. _____

Legend Group 4: Facility Name

1. _____
2. _____

Legend Group 5a: Contractor/A&E

1. _____
2. _____
3. _____
4. _____
5. _____

Legend Group 5b: Contractor/A&E

1. _____
2. _____
3. _____
4. _____
5. _____

Safety Performance Sign Legend Group 1: Project Title

1. _____
2. _____

Legend Group 2: Contractor/A&E

1. _____
2. _____

02110.1

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02110.1

SECTION 02110
CLEARING, GRUBBING, AND STRIPPING

PART 1 - GENERAL

1.1 SCOPE. The work covered by this section consists of furnishing all plant, labor, equipment, and materials, and performing all operations necessary for the clearing, grubbing, and stripping of the areas specified herein or indicated on the drawings, and for the removal and disposal of all cleared, grubbed, and stripped materials.

1.2 QUALITY CONTROL.

1.2.1 General. The Contractor shall establish and maintain quality control for clearing and grubbing operations to assure compliance with contract requirements, and maintain records of quality control for all construction operations including but not limited to the following:

(1) Clearing, Grubbing, and Stripping. Limits, percentage of area complete; type of material.

(2) Disposition of Cleared, Grubbed, and Stripped Materials. Method and location of disposition; damage to timber or improvements which are not to be cleared.

1.2.2 Reporting. A copy of these records of inspections and tests, as well as the records of corrective action taken, shall be furnished to the Government daily.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 CLEARING. Clearing, unless otherwise specified, shall consist of the complete removal above the ground surface of all trees, stumps, down timber, snags, and brush from within the construction limits shown on the drawings, unless otherwise noted, including the complete cleanup of the area by the removal and disposal of all debris resulting from clearing operations, to the extent hereinafter specified.

3.1.1 Merchantable Timber. Merchantable timber and other cleared material may be disposed of at the Contractors option, as long as such merchantable timber and other cleared material are removed from the area and are satisfactorily disposed of in accordance with the provisions of paragraph 02110-3.4.

3.1.2 Timber Clearing. Trees within the clearing area shall be felled in such a manner as to avoid damage to trees to be left standing and trees outside the clearing area, and with due regard for the safety of employees and others.

3.2 GRUBBING. Grubbing shall consist of the removal of all stumps. Roots and other projections larger than 1.5 inches in diameter shall be removed to a depth 1 foot below the natural ground surface.

3.2.1 Areas to be Grubbed. Grubbing shall be performed within the limits of all areas designated for timber clearing as stated in paragraph 02110-3.1.1 above. All holes caused by grubbing operations, except areas of

excavation, shall be backfilled with fill material as specified in SECTION 02221, paragraph 3.2, placed in 8 inch layers to an elevation of the adjacent ground surface, and each layer compacted to a density equivalent to that of the surrounding materials.

3.3 STRIPPING. Stripping shall consist of the removal of materials down to bare earth and without removing more earth than is necessary and no less than 4 inches. Stripping shall be performed prior to placing embankment material.

3.4 DISPOSAL OF MATERIAL. All material resulting from the clearing and grubbing operations shall be piled in areas adjacent to the construction areas and as directed by the Contracting Officer. All timber from which saw logs, posts, ties or cordwood can be produced shall become the property of the Contractor, and in the interest of conservation it is required that the Contractor make a reasonable effort to salvage such material. All material resulting from the stripping operations shall be spread smoothly in adjacent areas to the construction.

-- END OF SECTION 02110 --

02220.1

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SECTION 02220 - EXCAVATION

PART 1 - GENERAL

1.1 SCOPE. The work covered by this section consists of furnishing all plant, labor, equipment, and material, and performing all operations necessary for stockpiling materials, excavation of borrow areas, excavation for pipes, removal of unsuitable material from levee, structure, and graded area foundations, and all other excavation incidental to the construction of levees, pipes and graded areas as specified herein, as shown on the drawings, or as otherwise directed by the Contracting Officer.

1.2 QUALITY CONTROL.

1.2.1 General. The Contractor shall establish and maintain quality control for excavation operations to assure compliance with contract requirements, and maintain records of quality control for all construction operations including, but not limited to, the following:

- (1) Borrow Areas. Location, limits, allowable depths, and drainage;
- (2) Pipes. Location, limits, allowable depths, and drainage;
- (3) Disposition of Materials. Suitability of materials and waste areas;
- (4) Quantity Surveys. Accuracy and timeliness.

1.2.2 Reporting. A copy of these records of inspections and tests, as well as the records of corrective action taken, shall be furnished to the Government daily.

1.3 SUBMITTALS. Government approval is required for all submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted to the Contracting Officer in accordance with SECTION 01300 SUBMITTAL PROCEDURES:

1.3.1 Statements. Borrow Area Excavation Plan; GA. Submit an excavation plan; excavation shall not begin until the Contracting Officer's written approval has been received. The plan shall contain, as a minimum, the following:

(1) Proposed methods for draining and keeping dry borrow areas to be excavated under this contract which may be flooded by high river stages or high groundwater conditions prior to excavation.

(2) Proposals for making optimum use of available borrow, including proposed methods for smoothing the bottom of the borrow areas after having completed use of the areas in order to facilitate draining.

(3) The plan shall also include the location and limits of the temporary access road to these borrow areas.

1.3.2 Data.

1.3.2.1 Inlet Structure Temporary Cofferdam: GA. The Contractor shall submit the layout of the temporary cofferdam for construction of the inlet structure, and manufacturer's information for commercially available

components incorporated in the cofferdam scheme.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.1 EXCAVATION IN BORROW AREAS.

3.1.1 Right-of-Way and Borrow Areas. The rights-of-way and earth materials for constructing the work will be furnished without cost to the Contractor, at locations shown on the drawings.

3.1.2 Depth and Size of Borrow Areas. The borrow areas shall conform to the requirements prescribed herein and as shown on the drawings. The estimated permissible depth of borrow area excavation is indicated on the drawings, however the Contracting Officer reserves the right to modify the permissible depth in accordance with subsurface conditions determined as work proceeds. Because the varying river stages affect the groundwater level, the depth and size of borrow areas may vary. Any excavation below the depths and slopes specified herein, shown on the drawings or ordered by the Contracting Officer, shall be deemed a violation of these specifications and the resulting cavity shall be immediately filled to the specified slope line plus 30 percent additional material for shrinkage, or shall be remedied as authorized by the Contracting Officer. The borrow areas excavated under this contract and flooded from high river stages or upland runoff shall be drained and allowed to dry as quickly as practicable. However, if in the opinion of the Contracting Officer a borrow area cannot be thoroughly drained, the Contractor may be given the option of removing the borrow material as specified in 02220-3.1.4 below. Except as otherwise directed by the Contracting Officer, the excavation of the borrow areas shall begin at the leveeward limits of the borrow area and proceed outward to be continuous throughout the length of the borrow areas to the permissible borrow depths to provide the required quantity of suitable material, and in such manner that all suitable available material within the required width will be utilized. The results of soil testing of representative soil samples from the borrow pit are described in SECTION 02221 - EMBANKMENT, paragraph 2.2.

3.1.3 Borrow Area Excavation Plan. The Contractor shall submit an excavation plan for approval by the Contracting Officer and shall not begin excavation until the Contracting Officer's written approval has been received. The plan shall contain, as a minimum, the following:

(1) The Contractor's proposed methods for draining and keeping dry borrow areas to be excavated under this contract which may be flooded by high river stages, high groundwater conditions or surface runoff prior to excavation.

(2) The Contractor's proposals for making optimum use of available borrow, including the Contractor's proposed methods for smoothing the bottom of the borrow pits after having completed use of the areas in order to facilitate draining.

(3) The plan shall also include the location and limits of the temporary access road to these borrow areas.

3.1.4 Wet Borrow Areas. If a designated borrow area is in standing water or is too wet to access with normal earth moving equipment as specified in SECTION 02221 - EMBANKMENT, the Contractor, with the approval of the Contracting Officer, shall:

(1) Remove borrow material from within the designated borrow limits with a dragline or other approved equipment; and

(2) Stockpile wet borrow to allow drainage. Stockpiles may be of any configuration and may be located near the borrow area or near the levee, but not within the levee proper. The Contractor may spread and disk stockpiled material to facilitate drainage. Material shall remain stockpiled until it is workable with normal earth moving equipment as specified in paragraph 02221-2.2.

(3) When material has dried sufficiently, it shall be placed in the embankment and compacted as specified in SECTION 02221 - EMBANKMENT.

3.2 EXCAVATION FOR PIPES. The surface upon which pipe is to be placed shall be accurately finished to the lines and grades as shown on the drawings. Where dimensions of pipe trenches are not shown on the drawings, the bottom width shall be not less than 2 feet. The excavation shall be maintained in the dry and the Contractor shall be prepared to pump any surface or seepage water.

3.3 DISPOSITION OF MATERIALS.

3.3.1 Disposition of Suitable Materials. Excavated materials which are suitable for incorporation in the levee or other fills as defined by paragraph 2.2 of SECTION 02221, shall be placed directly therein or stockpiled for future use. Excess suitable material shall be disposed of in the designated disposal area.

3.3.2 Disposition of Unsuitable Material. Excavated materials that are unsuitable for use in the levee or other fills as defined by paragraph 2.2.1 of SECTION 02221, shall be disposed of in designated disposal areas.

3.3.3 Disposal Areas. Abandoned portions of borrow areas or other areas as designated by the Contracting Officer may be used as disposal areas. Disposal areas shall be graded to remove all humps and abrupt changes in elevation and sloped to drain.

3.4 CARE OF WATER. Varying river stages, upland drainage and backwater from the river may affect surface water and groundwater levels and thus affect construction activities associated with excavation and embankment placement. Areas requiring drainage prior to excavation and embankment placement shall be drained and allowed to dry as quickly as practicable. The Contractor shall employ methods for keeping areas that require excavation and embankment placement free of water from any source that will impede construction activities.

3.4.1 Temporary Cofferdam. The Contractor shall furnish for review and approval a temporary cofferdam scheme, which should not include placing embankment material into the lake. At the Contractor's option, the scheme submitted may include a system of steel supports and an impervious membrane. The Portadam system, manufactured by Portadam, Inc., Williamstown, NJ, and the Fas-Dam system, manufactured by Fas-Dam, Inc., St. Louis, MO, are systems of this type.

3.4.2 Piezometer Abandonment. Piezometers to be abandoned shall be sealed to the ground surface with neat cement grout by means of a tremie pipe inserted to the bottom of the piezometers. The neat cement grout shall be a mixture consisting of one bag of cement (94 pounds) to not more than six gallons of clean water. Additives such as bentonite may be added up to 6 percent by dry weight to increase fluidity or to control shrinkage. The upper 2 feet of the piezometers pipe shall be removed and the hole backfilled with

native soils to the surface. All abandoned piezometers shall be sealed according to Section 920.120 of the Illinois Water Well Construction Code, including the requirement for submittal of a completed well sealing form to the Illinois Department of Public Health. Piezometers to be abandoned will be marked in the field by the Contracting Officer during clearing and grubbing activities.

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SECTION 02221
EMBANKMENT

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SECTION 02221 - EMBANKMENT

PART 1 - GENERAL

1.1 SCOPE. The work covered by this section consists of furnishing all plant, labor, equipment, and performing all operations in connection with excavation, borrow removal, foundation preparation, backfill around appurtenant structures, construction of the new levee, and as hereinafter specified.

1.2 QUALITY CONTROL.

1.2.1 General. The Contractor shall establish and maintain quality control for all earthwork operations to assure compliance with contract requirements, and maintain records of its quality control for all construction operations including but not limited to the following:

a. Equipment. Type, size, and suitability for construction of the prescribed work.

b. Foundation Preparation. Breaking surface in advance of embankment construction, and during fill placement when necessary, drainage of foundation and partially completed fill.

c. Materials. Suitability of materials for use in embankment construction.

d. Construction. Layout, maintaining existing drainage, thickness of layers, spreading and compacting.

e. Grade and Cross Section. Side slopes, grades, crown width and crown slope.

f. Grade Tolerances. Check fills to determine if placement conforms to prescribed grade and cross section.

g. Roads and Ramps.

h. Materials Testing and Inspection. The Contractor shall be responsible for ensuring that all required testing, and any additional testing required by the Contracting Officer, is performed. All testing shall be performed by a commercial soil-testing laboratory that has been validated by the Corps of Engineers MTC and approved by the Contracting Officer.

1.2.2 Reporting. A copy of these records of inspections and tests, as well as the records of corrective action taken, shall be furnished the Government daily.

1.3 SUBMITTALS. Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted to the Contracting

Officer in accordance with SECTION 01300 - SUBMITTAL PROCEDURES.

1.3.1 Reports. Soil Test Results; GA. Submit soil classification and moisture density test results as specified.

1.3.2 Certificates. Soil Testing Lab; GA. Submit the name and address of the validated soil testing lab prior to commencing any earthwork.

1.3.3 Statements. Excavation and Backfill Plan; GA. Submit excavation and backfill plan with manufacturer's data sheets on proposed equipment.

1.3.4 Data. Cellular Confinement System; GA. Submit manufacturer's data sheets on proposed equipment.

1.4 REFERENCES. The following publications, referred to hereafter by basic designation only, form a part of this specification to the extent indicated by the reference thereto:

1.4.1 American Society for Testing and Materials ASTM).

ASTM D 698	(1991)	Laboratory Compaction Characteristics of Soil Using Standard Effort
ASTM D 1556	(1990)	Density and Unit Weight of Soil in Place By The Sand-Cone Method
ASTM D 2216	(1998)	Laboratory Determination of Water (Moisture) Content of Soil and Rock
ASTM D 2487	(1998)	Classification of Soils for Engineering Purposes
ASTM D 2937	(1994)	Density of Soil in Place by the Drive-Cylinder Method
ASTM D 4318	(1998)	Liquid Limit, Plastic Limit and Plasticity Index of Soils

PART 2 - PRODUCTS

2.1 EXCAVATION AND BACKFILL PLAN. The Contractor shall submit a written excavation and backfill plan 30 days prior to the beginning of any excavation. This plan shall include, but not be limited to, the Contractor's proposed sequence of construction for all excavation and backfill operations, including excavating the borrow pits and ditches, transporting, placing, and compacting; quantity, type and final disposition of stockpiled materials; proposed disposition of all excavated materials, including items which are anticipated to be disposed of off-site. Approval of the detailed plan shall be obtained from the Contracting Officer prior to starting the work. If necessary, the plan shall be modified as required to meet field conditions,

and the modifications shall be approved prior to use. The plan shall contain, as a minimum, the following:

- (1) Proposed methods of preventing interference with, or damage to, existing underground or overhead utility lines, trees designated to remain and other manmade facilities or natural features designated to remain within or adjacent to the construction right-of-way.
- (2) The proposed methods for draining and keeping borrow areas dry during excavation under this contract.
- (3) Stockpiling plan for embankment material before it is transported to the project site showing locations, stockpile heights, slopes, limits, erosion control, silt filter fencing and drainage around the stockpile areas.
- (4) A complete listing of equipment to be used to be used for excavation and to transport the excavated material.
- (5) The Contractor's proposed road pattern plan and plan for how dust control measures will be implemented.
- (6) The Contractor's proposed methods for dressing the bottom and sides of the borrow area.

2.2 EQUIPMENT.

2.2.1 Crawler-Type Tractors. Crawler-type tractors used for spreading or compacting shall weigh not less than 20,000 pounds, shall exert a unit tread pressure of not less than 6 pounds per square inch, and shall be operated at speeds not to exceed 3.5 miles per hour.

2.2.2 Tractor-Drawn Sheep's Foot Rollers. Tractor-drawn sheep's foot rollers shall consist of one or more units. Each unit shall consist of a cylindrical drum not less than 60 inches in length and not less than 60 inches in diameter. The drums shall be water, or sand and water ballasted. Each drum shall have staggered feet uniformly spaced over the cylindrical surfaces so as to provide approximately 3 sheep's feet for each two square feet of drum surface. The sheep's feet shall be 7 to 9 inches in clear projection from the cylindrical surface of the roller, and shall have a face area of not less than 5 nor more than 10 square inches. The weight of the roller when fully loaded shall not be less than 4000 pounds per linear foot of drum length and when empty shall not be more than 2500 pounds per foot of drum length. The Contractor shall be required to vary the amount of ballast in the drums to obtain optimum compactive effort for the material being compacted. The rolling units shall be equipped with a suitable device for cleaning the feet. The rolling units of multiple-type sheep's foot rollers shall be pivoted on the main frame in a manner that will permit the units to adapt themselves to uneven ground surfaces and to rotate independently. The roller shall be pulled by a tractor at a speed not to exceed 3.5 miles per hour.

2.2.3 Self-Propelled Sheeps Foot Rollers. At the option of the Contractor, self-propelled sheeps foot rollers may be used in lieu of tractor-drawn rollers. Self-propelled rollers exceeding the empty weight requirement may be used provided that by the substitution of feet having a face area not exceeding 10 square inches, the nominal foot pressure on the feet of the self-propelled roller may be adjusted to approximate the nominal foot pressure of the towed roller for the particular working condition required for the towed rollers. The feet shall have a 7-inch to 9-inch projection from the cylindrical surface of the roller. For self-propelled rollers, in which steering is accomplished through use of rubber-tired wheels, the tire pressure shall not exceed 40 pounds per square inch. Self-propelled rollers shall be operated at a speed not to exceed 3.5 miles per hour.

2.2.4 Alternative Compaction Equipment. The Contractor may propose for use alternative types of compaction equipment not included in these specifications. The suitability of the alternative equipment shall be demonstrated to the Contracting Officer by a field test conducted by and at the expense of the Contractor. The alternative compaction equipment shall be capable of properly compacting the soil so that no planes of weakness or laminations are formed in the fill. The field test shall consist of compacting a minimum of three layers of an area of embankment with the alternative type equipment. Testing and inspection of the area shall then be performed by the Contractor at no additional cost to the Government. Procedures for constructing and testing the area shall be provided by the Contracting Officer. Each proposed alternative type of equipment shall be capable of compacting a layer of soil not less than 12 inches thick. A minimum of five complete passes over each layer of the test fill shall be required for each type of alternative equipment that is allowed for use, unless in the course of constructing the test fill the Contractor is able to demonstrate that proper compaction can be obtained with fewer passes. Alternative type equipment shall be operated at speeds not to exceed 3.5 miles per hour. If sufficient previous testing has been performed on the alternative compaction equipment proposed by the Contractor to verify the suitability of the equipment to the Contracting Officer's satisfaction, the Contracting Officer may determine that the above-specified field test is not required.

2.2.5 Sprinkling Equipment. Sprinkling equipment used for moisture control shall be designed to apply water uniformly and in controlled quantities to variable widths of surface.

2.2.6 Miscellaneous Equipment. Scarifiers, disks, trash pumps, ditching equipment, power tampers, and other equipment shall be types suitable for construction of embankment.

2.3 LEVEE AND EMBANKMENT MATERIALS.

2.3.1 General. The levee, embankment and ramps shall be constructed with borrow material from a Government-furnished borrow source as shown on the Contract Drawings. The foundation and backfill materials shall be free from unsuitable and frozen materials.

2.3.2 Government-Furnished Borrow. The Contractor shall excavate borrow and backfill of such type and quantity as required to complete the levee embankment and ramps. The borrow shall come from a Government-provided, borrow source. Upon final excavation of a borrow pit, the site will be disked as specified in Paragraph 3.1.4.

2.3.3 Unsuitable Materials. Materials which are classified as unsuitable for backfill and foundation material are defined as masses of organic matter, sticks, branches, roots, and other debris. It also includes materials that do not meet the soil classifications listed for suitable fill. Not more than 1 percent by volume of objectionable material shall be contained in the earth material placed in each cubic yard of the embankment section. Pockets and/or zones of wood shall not be placed in the embankment.

2.3.4 Suitable Embankment Materials. Suitable embankment materials shall be clays (CL, CH) or silts (ML) as classified by ASTM D 2487. If sand is encountered, the sand shall be blended with less pervious materials to the extent that it will classify as suitable material.

2.3.5 Frozen Materials. Under no circumstances shall frozen earth, snow or ice be placed in the backfill and foundation.

2.4 PIPE BACKFILL MATERIALS. Pipe backfill materials shall be constructed of materials classified by the Unified Classification Systems as clays (CL). The clay materials shall be obtained from the borrow areas and required excavations as prescribed in SECTION 02220 - EXCAVATION. Under no circumstances shall unsuitable materials or frozen earth, snow or ice be placed in the pipe backfill.

2.5 CELLULAR CONFINEMENT SYSTEM. The cellular confinement system shall be constructed from heavy-duty polyethylene. It shall have a cell size of approximately 10-inches by 8-inches and have a cell depth of 8-inches. The cellular confinement system shall be filled with concrete as specified in SECTION 3300 - CONCRETE.

PART 3 - EXECUTION

3.1 EXCAVATION.

3.1.1 General. Excavation of every description, and of whatever substance encountered, shall be performed to the lines, grades, and extents as determined in the Contractor's excavation and backfill plan.

3.1.2 Stockpiles. Stockpiles shall be as specified in SECTION 02220 - EXCAVATION.

3.1.3 Borrow Pit Excavation. The Contractor shall not excavate beyond the depth limitations identified on the Contract drawings. For borrow areas where no limitation is specified, the Contractor shall excavate the area uniformly. The borrow sites will be sloped to drain in smooth lines to remove any unnecessary undulations or as directed by the Contracting Officer.

Upon exhausting or removing the required amount of material from a borrow site, the Contractor shall disk and level the borrow site.

3.1.4 Abandonment of Borrow Sites and Haul Roads. All borrow sites will be disked and dressed prior to abandonment of the site. Haul roads will be chisel plowed to a minimum depth of 18 inches and then disked. Borrow sites will be approved for abandonment by the Contracting officer after the sites are disked. Once abandoned, the borrow sites shall not be re-opened.

3.2 EMBANKMENT FOUNDATION PREPARATION.

3.2.1 General. After excavating, clearing, grubbing, and stripping the entire earth surface on or against which fill is to be placed shall be thoroughly scarified to a depth of 6 inches. If, for any cause, this scarified surface becomes compacted in such a manner that, in the opinion of the Contracting Officer, a plane of weakness might be induced, it shall again be adequately scarified before depositing material thereon.

3.2.2 Drainage. All foundations receiving fill and all partially completed fill shall be kept thoroughly drained. The Contractor shall drain or pump water from any area to receive fill.

3.2.3 Frozen Ground. Fill shall not be placed upon frozen ground.

3.3 FOUNDATION AND BACKFILL.

3.3.1 General. Embankment material shall be the suitable material from the borrow area. Fine-grained fill shall not be placed in water, or on wet, saturated or loose ground. Wet ground shall be disked or allowed to dry until firm enough to permit fill placement or the wet ground shall be removed at no additional cost to the Government. The materials for fill shall be placed or spread in layers, the first layer not more than 6 inches in thickness and the succeeding layers not more than 8 inches in thickness prior to compaction. When the surface of any compacted layer is too smooth to bond properly with the succeeding layer, it shall be adequately scarified to a depth of 6 inches before the next layer is placed thereon.

3.3.2 Moisture Control. The Contractor shall control the moisture content of the compacted fill material. No material shall be compacted with an in-place moisture content more than 3.0 percent above nor less than 2.0 percent below optimum moisture content determined by testing as specified in 02221-3.6.3. The moisture content of the fill material shall be determined by performing moisture control in accordance with ASTM D 2216 and specified in 02221-3.6.5. The Contractor shall perform the necessary work in moisture control to bring the borrow material within the moisture content range specified above. Material that is not within the specified limits after compaction shall be reworked, regardless of density. The moisture content after compaction shall be as uniform as practicable throughout any one layer of impervious materials. Material that is too wet shall be spread out and permitted to dry, assisted by disking or harrowing, if necessary, until the moisture content is reduced to an amount within the specified limits. When the material is too dry, the Contractor shall be required to spray water on

each layer on the fill. Harrowing, or other approved methods shall be required to work the moisture into the material until a uniform distribution of moisture is obtained. Water applied on a layer of fill shall be accurately controlled in amount so that free water shall not appear on the surface during or subsequent to rolling. Should too much water be added to any part of the fill so that the material is too wet to obtain the desired compaction, the rolling on that section of the fill shall be delayed until the moisture content of the material is reduced to an amount within the specified limits. If it is impracticable to obtain the specified moisture content by wetting or drying the material on the fill, the Contractor may be required to prewet or dry back the material at the sources of excavation. If, in the opinion of the Contracting Officer, the top or contact surfaces of the partial fill section become too dry to permit suitable bond between these surfaces and the additional fill to be placed thereon, the Contractor shall loosen the dried materials by scarifying or disking to such depths as may be directed by the Contracting Officer, shall dampen the loosened material to an acceptable moisture content, and shall compact this layer in accordance with the requirements of this paragraph.

3.3.3 Compaction. When the water (moisture) content and conditions of the spread layers are satisfactory, each layer shall be compacted to a minimum of 95 percent of the maximum dry density as determined by the moisture density relationship determined in paragraph 02221-3.6.3. Determination of in-place density shall be in accordance with ASTM D 1556 or ASTM D 2937 and specified in 02221-3.6.4. The impervious materials for fills and backfills shall be placed and spread in layers, the first layer not more than 6.0 inches in thickness and the succeeding layers not more than 8.0 inches in thickness prior to compaction. Portions of the fills and backfills, which the compacting equipment cannot reach for any reason, shall be compacted to required density with power tamping rammers. Impervious layer thickness shall not exceed 4.0 inches when power-tamping rammers are used for compaction. The Contractor shall ensure that its compaction methods do not damage any existing utilities. Any damage caused by the Contractor's operation shall be repaired at the Contractor's expense.

3.3.4 Additional Compaction. If, in the opinion of the Contracting Officer, the desired compaction of any portion of the fill has not been secured, the Contractor shall make additional efforts over the surface area of such designated portion until the desired compaction has been obtained.

3.3.5 Dressing. The entire fill shall be brought to not less than the prescribed design cross section within allowable tolerance, at all points. Unreasonable roughness of surface shall be dressed out to permit turving operations.

3.3.6 Care of Water. The excavation and all partially completed fill shall be kept thoroughly drained. The Contractor shall control the earthwork to prevent water from flowing into the work area.

3.3.7 Backfill Around Appurtenant Structures. Equipment producing concentrated wheel or track loads will not be allowed within 4 feet of the appurtenant structures. The backfills shall be compacted only by hand and/or

mechanically tamped within a minimum distance of four feet in all directions from the structures. Where backfill shall be placed on both sides of the structures, the backfills shall be brought up to grade uniformly so as to not induce any unbalanced lateral loading. Each layer of material shall be compacted to at least 95 percent of the maximum dry density as determined by the moisture density relationship determined in paragraph 02221-3.6.3. Determination of in-place density shall be in accordance with ASTM D 1556 or ASTM D 2937.

3.4 PIPE FOUNDATION.

3.4.1 Excavation. The pipe trench excavation and disposition of excavated materials shall be in accordance with SECTION 02220 - EXCAVATION.

3.4.2 Pipe Backfill. Backfill around the corrugated metal pipe shall be hand compacted from the circumference of the pipe to a distance of at least one (1) meter from the pipe. When compacting under the haunch of pipes, a pole or a (2 x 4) piece of lumber shall be used to achieve desired density in this area. Such effort shall be followed by the use of power or manual tampers working as close to the pipe as possible without damaging the gravity drainpipe. The fill material to be hand compacted shall be placed in layers not exceeding 4 inches in thickness and shall be compacted by application of a motor driven hand tamper or other approved hand compaction equipment over the fill in such a manner that every point of the surface of each layer of fill will be compacted by the hand tamper. The pipe conduit shall be held securely in place at all times while tamping is being performed to ensure proper bond between the pipe and the ground. Sheepsfoot rollers, pneumatic-tired rollers or other approved equipment well suited to the type of material being compacted shall accomplish compaction of subsequent lifts. No fill shall be placed against slopes steeper than one (1) horizontal to one (1) vertical unless approved.

3.4.3 Compaction. Embankment material (as defined by paragraph 02221-2.2) placed as pipe backfill shall be compacted at optimum moisture (plus or minus 3 percent) to within 95 percent of maximum density as determined by ASTM D 698 (Standard Proctor). Field density shall be determined in accordance with ASTM D 2937 (Drive Cylinder) or by ASTM D 1556 (Sand Cone) on each lift placed.

3.5 CROSS SECTIONS OF MATERIALS. Unless otherwise specified, the dimensions and slopes shall conform to the applicable cross sections, within allowable tolerance, shown on the drawings.

3.6 GRADE TOLERANCES. All fill shall be constructed to the design grade and cross section shown on the drawings. For all fill, at all points, a tolerance of zero below and 1/10 of 1 foot above at the crown or 3/10 of 1 foot elsewhere above the prescribed design grade and cross section shown will be permitted in the final dressing provided that there are no abrupt humps or depressions in surfaces or bulges in the width of the crown, and the side slopes are uniform.

3.7 TESTING.

3.7.1 General. Testing shall be performed by an validated commercial testing laboratory. Inspections and test results shall be certified by a registered professional civil engineer. These certifications shall state that the tests and observations were performed by or under the direct supervision of the engineer and that the results are representative of the materials or conditions being certified by the tests.

3.7.2 Soil Classification Tests. Soil classification tests shall be performed in accordance with ASTM D 2487. The Contractor shall furnish the results of the initial classification test for each material from each designated backfill source at least 15 days prior to placing the fill. The Contractor shall perform one test for each designated source. Additional tests may be required by the Contracting Officer if the material in the borrow areas appears to be noticeably different from that which was tested.

3.7.3 Moisture Density Relationships. The moisture-density relations of the fine-grained fill material shall be determined in accordance with ASTM D 698, Method A. The Contractor shall furnish the results of the initial moisture density test for material from each of the borrow areas at least 15 days prior to placing the fill. The Contractor shall perform one test for each designated borrow pit, as a minimum. The Contractor shall submit additional tests for every 6,000 cubic yards placed in the embankment. The Contracting Officer may require additional tests if the material in any borrow area appears to be noticeably different from that which was tested. A classification test shall be submitted with each moisture-density relation test.

3.7.4 In-Place Density Testing. The in-place density of the backfill materials shall be accomplished at the direction of the Contracting Officer in accordance with ASTM D 2937 or ASTM D 1556. A minimum of four field density tests shall be performed for each lift of 2,000 cubic yards of completed backfill with the horizontal locations staggered in the fill areas. The in-place soil density shall be compared to the requirements in 02221-3.6.3. Fill not meeting the required specifications for in-place density shall be retested, at no additional cost to the Government, after additional compaction has been completed.

3.7.5 Water (Moisture) Content Tests. Determination of in-place water content shall be performed in accordance with ASTM D 2216, Micro Wave open moisture content shall not be allowed, and shall be performed on all in-place density tests for fine-grained backfill. Fill not meeting the required specifications for water content shall be retested, at no additional cost to the Government, after corrective measures have been applied.

3.7.6 Additional Testing. The Contracting Officer may request additional tests if:

- (1) There is reason to doubt the adequacy of the compaction.
- (2) Special compaction procedures are being used.

(3) Materials change and the Contracting Officer determines that the Contractor's testing is inadequate.

3.8 SLIDES. In the event of sliding of any part of an excavation, fill, or backfill on the levee during its construction, or after its completion but prior to its acceptance, the Contractor shall, upon written order of the Contracting Officer, cut out and remove the slide and then restore that portion of the excavation, fill, or backfill on the levee. If the slide is caused through the fault of the Contractor, the foregoing operations and construction shall be performed at no additional cost to the Government. If the slide is not the Contractor's fault, an equitable adjustment will be made to the contract price.

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SECTION 02230 - CRUSHED STONE SURFACING

PART 1 - GENERAL

1.1 SCOPE. The work covered by this section of the specifications consists of furnishing all plant, labor, equipment and materials, and performing all work necessary for crushed stone surfacing as shown on the drawings and as specified herein.

1.2 QUALITY CONTROL.

1.2.1 General. The Contractor shall establish and maintain quality control for all operations to assure compliance with contract requirements and maintain records of its quality control for all construction operations, including but not limited to the following:

- (1) Preparation of subgrade
- (2) Crushed stone surface course (materials, placing)

1.2.2 Reporting. A copy of these records, as well as the records of corrective action taken, shall be furnished to the Government daily.

1.3 APPLICABLE SPECIFICATIONS. The materials for, and construction of the crushed stone surface course shall conform to the applicable provisions of the hereinafter cited sections and articles of the Illinois Department of Transportation (IDOT) Standard Specifications for Road and Bridge Construction, Adopted January 1, 2002. The term "Engineer" as used therein shall be interpreted to mean "Contracting Officer."

PART 2 - PRODUCTS

2.1 CRUSHED STONE SURFACING. The crushed stone surfacing shall be a 6-inch layer of aggregate conforming to the applicable articles of SECTION 351, AGGREGATE BASE COURSE, and shall be CA-6.

2.2 GEOTEXTILE. Geotextile shall meet the requirements specified in SECTION 02240 - GEOTEXTILE.

PART 3 - EXECUTION

3.1 INSTALLATION OF GEOTEXTILE. A layer of geotextile shall be installed prior to placing the crushed stone aggregate. The surface to receive the geotextile shall be prepared to a relatively smooth condition free of obstructions, depressions and debris. Erosion features such as rills, gullies, etc. shall be graded out of the surface before geotextile placement. The geotextile shall be laid smooth and free of tension, stress folds, wrinkles or creases. Any damage to the geotextile during placement of the crushed stone surfacing shall be replaced at the Contractor's expense.

3.2 INSTALLATION OF CRUSHED STONE SURFACING. Crushed stone shall be installed in accordance with the applicable articles of SECTION 351, AGGREGATE

BASE COURSE. The Contractor shall repair any damage to the completed crushed stone surface, caused by construction operations, at no additional cost to the Government.

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SECTION 02240 - GEOTEXTILE AND GEOGRID

PART 1 GENERAL

1.1 SCOPE. The work provided for herein consists of furnishing all plant, labor, material, and equipment and performing all operations required for furnishing, hauling, and placing the geotextile, complete, as specified herein and shown on the contract drawings, and maintaining the geotextile until acceptance.

1.2 QUALITY CONTROL.

1.2.1 General. The Contractor shall establish and maintain quality control for operations under this section to assure compliance with contract requirements and maintain records of its quality control for all materials, equipment, and construction operations, including but not limited to the following:

- (a) Materials
- (b) Installation

1.2.2 Reporting. A copy of the records of inspection and tests, as well as the records of corrective action taken, shall be furnished to the Government, daily.

1.3 APPLICABLE PUBLICATIONS. The following publications of the current issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by the references thereto.

1.3.1 American Society for Testing and Materials (ASTM).

D 3786-87	Hydraulic Bursting Strength of Knitted Goods and Nonwoven Fabrics - Diaphragm Bursting Strength Tester Method
D 4355 (1992)	Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus)
D 4595 (1986; R 1994)	Tensile Properties of Geotextiles by the Wide-Width Strip Method
D 4632-91	Grab Breaking Load and Elongation of Geotextiles
D 4751-95	Determining Apparent Opening Size of a Geotextile
D 4833-88	Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products
D 4873 (1997)	Identification, Storage, and Handling of Geosynthetic Rolls
D 5262 (1997)	Evaluating the Unconfined Tension Creep Behavior of Geosynthetics
D 5321	Determining the Coefficient of Soil and

(1992; R 1998) Geosynthetic or Geosynthetic and Geosynthetic Friction by the Direct Shear Method

1.3.2 Geosynthetic Institute (GSI).

GRI GG1 (1988)	Geogrid Rib Tensile Strength
GRI GG4a (1991)	Determination of the Long-Term Design Strength of Stiff Geogrids
GRI GG4b (1991)	Determination of the Long-Term Design Strength of Flexible Geogrids
GRI GG5 (1991)	Geogrid Pullout
GRI GG6 (1995)	Grip Types for Use in the Wide Width Testing of Geotextiles and Geogrids

1.4 SUBMITTALS. The Contractor shall submit to the Contracting Officer for approval in accordance with SECTION 01300 - SUBMITTAL PROCEDURES, certificates of compliance attesting that the geotextile meets specification requirements.

1.4.1 Certificates. GA. Submit certificates of compliance attesting that the geotextile meets specification requirements.

1.5 SHIPMENT AND STORAGE. The geotextile shall be furnished in a protective wrapping which shall protect the geotextile from direct sunlight, ultra-violet rays, temperatures greater than 140 degree Fahrenheit, mud, dirt, dust and debris. To the extent possible, the fabric shall be maintained wrapped in a heavy duty protective covering.

PART 2 PRODUCTS

2.1 GEOTEXTILE. The geotextile shall be of nonwoven sheet construction and consist of long chain polymeric fabric composed of polypropylene, polyethylene, polyester, polyamide or polyvinylidene-chloride fibers weighing at least 4.0 to 8.0 ounces per square yard, and shall contain stabilizers and/or inhibitors added to the basic plastic if, necessary, to make the filaments resistant to deterioration due to ultraviolet and heat exposure. The fibers shall be oriented into a random web and stabilized whereby they retain there positions relative with each other. The geotextile shall be free of any chemical treatment or coating which reduces permeability and shall be inert to chemicals commonly found in soil. The edges of the geotextile shall be finished to prevent the outer fiber from pulling away from the geotextile. The geotextile shall conform to the following physical property requirements:

<u>Physical Property</u>	<u>Test Procedure</u>	<u>Acceptable Values*</u>
Tensile Strength (Wet)	ASTM D 4632	120 pound minimum in any principal direction
Elongation - (Wet)	ASTM D 4632	At least 15 percent but no greater than 80 percent in any principal direction
Apparent Opening Size	ASTM D 4751	No finer than No. 100 No coarser than No. 70

		U.S. Standard Sieve
Puncture Strength	ASTM D 4833	75 pounds minimum
Mullen Burst Strength	ASTM D 3786	300 pounds per square inch minimum

*Unless stated otherwise all numerical values represent average roll values (i.e. any roll in a lot should meet or exceed the minimum value but not exceed the maximum value listed in the table.)

2.2 GEOGRID REINFORCEMENT. Geogrid shall be a geosynthetic manufactured for reinforcement applications. The geogrid shall be a regular network of integrally connected polymer tensile elements with aperture geometry sufficient to permit significant mechanical interlock with the surrounding soil, aggregate, or other fill materials. The geogrid structure shall be dimensionally stable and able to retain its geometry under manufacture, transport and installation. The geogrid shall be manufactured with 100 percent virgin resin consisting of polyethylene, polypropylene, polyester, or other approved material and with a maximum of 5 percent in-plant regrind material. Polyester resin shall have a minimum molecular weight of 25,000 and a carboxyl end group number less than 30. Polyethylene and polypropylene shall be stabilized with long term antioxidants.

2.2.1 Geogrid Reinforcement Properties. The reinforcement shown on the contract drawings shall meet the property requirements listed in Table 1.

TABLE 1

LOAD CAPACITY

<u>PROPERTY</u>	<u>METHOD</u>	<u>SECONDARY REINFORCEMENT TYPES</u>	
		<u>S1</u>	<u>S2</u>
Tensile Strength*			
2% Strain, lbs/ft*	ASTM D6637*	450	590
5% strain, lbs/ft*	ASTM D6637*	920	1,340

INTEGRITY OF PRODUCT STRUCTURE

<u>PROPERTY</u>	<u>TEST PROCEDURE</u>	<u>ACCEPTABLE VALUE</u>
Junction Efficiency, %of Ult. Tensile Strength	GRI-GG2-87 @ 10%/min	93
Flexural Stiffness*mg-cm	ASTM D1388, Option A	750,000
Aperture Stability**	Corps of Engineers	6.5

Unless noted otherwise, values shown are for the cross machine direction and represent minimum average roll values with the exception that Flexural Stiffness, which is determined in the machine direction and represents typical values. The tensile strength at 2 percent and 5 percent strain shall be determined with this test conducted without artificially deforming test materials under load before measuring such resistance or employing an artificial "secant" or "offset" tangent basis of measurement so as to overstate tensile properties.

*Bending resistance values determined in the machine direction using specimen

dimensions of 864 millimeters in length by 1 aperture in width.

**Resistance to in-plane rotation movement measured by applying a 20 kg-cm moment to the central junction of a 9-inch by 9-inch specimen restrained at its perimeter and measured in units of kg-cm/deg.

PART 3 EXECUTION

3.1 GEOTEXTILE INSTALLATION. The geotextile shall be placed in the manner and locations shown on the drawings. At the time of installation the geotextile shall be rejected if it has defects, rips, holes, flaws, deterioration or damage incurred during manufacturing, transportation, storage or installation and shall be replaced at no additional cost to the Government. The surface to receive the geotextile shall be prepared to a relatively smooth condition free of obstructions, depressions and debris. Erosion features such as rills, gullies, etc. shall be graded out of the surface before geotextile placement. The geotextile shall be laid smooth and free of tension, stress folds, wrinkles or creases.

3.1.1 Culvert Pipe Installation. The geotextile shall be placed around the joints of the culverts and under the pipe bedding as specified in 02610-3.1. At the time of installation the geotextile shall be rejected if it has defects, rips, holes, flaws, deterioration or damage incurred during manufacturing, transportation, storage or installation and shall be replaced at no additional cost to the Government.

3.1.2 Graded Stone C Installation. The geotextile shall be installed and anchored per manufacture's recommendations in the locations shown on the drawings. As the installation of the geotextile proceeds in the downstream direction, the upstream section shall overlap the downstream section a minimum of 18 inches and anchors installed.

3.1.3 Crushed Stone Surfacing Installation. The geotextile shall be placed in the manner and locations shown on the drawings. Any overlaps in the geotextile shall be a minimum of 18 inches.

3.1.4 Protection. The geotextile shall be protected at all times during construction from contamination by surface run-off and any geotextile so contaminated shall be removed and replaced with uncontaminated geotextile. The geotextile shall be covered with aggregate within 24 hours of placement. Any damage to the geotextile during its installation or during placement of aggregate shall be replaced by the Contractor at no cost to the Government.

3.2 GEOGRID INSTALLATION.

3.2.1 Subgrade Preparation. Immediately prior to placement of the geogrid, the surface on which the geogrid will be placed shall be free of rock and other material that could damage the geogrid or the underlying geosynthetics.

3.2.2 Placement. The geogrid shall be installed in accordance with the Manufacturer's recommendations. Geogrid shall be unrolled in the direction of reinforcement. After a layer of geogrid has been placed, suitable means, that do not damage the underlying geosynthetics, shall be used to hold the geogrid flat and in place until cover soil can be placed. Geogrid damaged during placement and covering shall be removed and replaced at no additional cost to the Government.

3.2.3 Overlaps and Fasteners. Adjacent rolls of geogrid shall be positioned edge-to-edge and loosely fastened to maintain alignment during fill placement. Adjacent rolls shall not be overlapped. Fastener type and spacing

shall be as recommended by the manufacturer and approved by the Contracting Officer. Metallic fasteners will not be allowed.

3.2.4 Cover Soil Placement. Geogrid shall be covered with the specified thickness of soil. The geogrid shall be kept smooth and taut during placement of cover materials. Equipment with low ground pressures shall be used to compact the soil over the geogrid.

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SECTION 02270
STONE PROTECTION

PART 1 - GENERAL

1.1 SCOPE. The work provided for herein consists of furnishing all plant, labor, equipment and materials, and performing all operations in connection with the construction of the stone protection, including foundation preparation, and grouted riprap as shown on the contract drawings and specified herein.

1.2 QUALITY CONTROL.

1.2.1 General. The Contractor shall establish and maintain quality control for all stone protection operations to ensure compliance with contract requirements, and shall maintain records of the quality control for all construction operations, including but not limited to the following:

- (1) Foundation preparation (line and grade).
- (2) Inspection at the work site to ensure use of specified materials.
- (3) Bedding layer gradation and placement.
- (4) Graded Stone C gradation and placement.
- (5) Grouted Riprap production and placement.

1.2.2 Reporting. A copy of the records of inspection and tests, as well as the records of corrective action taken, shall be furnished to the Government daily.

1.3 APPLICABLE PUBLICATION.

1.3.1 American Society for Testing and Materials (ASTM).

C 127-88(R 1993) Standard Test Method for Specific Gravity and Absorption of Coarse Aggregate

C 136-96a Sieve Analysis of Fine and Coarse Aggregates

1.4 SUBMITTALS. Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted to the Contracting Office in accordance with SECTION 01300 - SUBMITTAL PROCEDURES, and shall include, but not be limited to the following:

1.4.1 Source of Stone. GA. A list of stone source or sources shall be submitted at least 30 days prior to any placement of stone protection.

1.4.2 Gradation Test Data. FIO. The results of all gradations shall be submitted within 24 hrs. after completion of the test.

1.4.3 Method of Placement. GA. A detailed description of the method for placing the bedding and Graded Stone C shall be submitted at least 30 days prior to any placement of material.

1.4.4 Grouted Riprap. GA. A detailed description, the Contractor

proposes to use for placing the grout, equipment to be used, and type of curing. The submittals shall also include the grout design.
PART 2 - PRODUCTS

2.1 STONE MATERIALS.

2.1.1 General. All stone shall be durable material as approved by the Contracting Officer. The sources from which the Contractor proposes to obtain the materials shall be selected well in advance of the time when the material will be required. Stone protection materials shall be of a suitable quality to ensure permanence in the structure and in the climate in which it is to be used. It shall be free from cracks, seams, and other defects that would tend unduly to increase its deterioration from natural causes. The inclusion of objectionable quantities of dirt, sand, clay, and rock fines will not be permitted.

2.1.2 Sources and Evaluation Testing. All stone shall be obtained in accordance with the provisions in paragraph 32, STONE SOURCES of the Special Clauses. If the Contractor proposes to furnish stone from a source not listed in paragraph 32, the Contractor shall make such investigations as necessary to determine whether acceptable stone can be produced from the proposed source. Satisfactory service records on work outside the Corps of Engineers will be acceptable. If no such records are available, the Contractor shall make tests to ensure the acceptability of the stone. The tests to which the stone may be subjected will include petrographic analysis, specific gravity, abrasion, absorption, wetting and drying, freezing and thawing, and such other tests as may be considered necessary by the Contracting Officer. The following guidance is provided for use by the Contractor in analyzing a new source of stone. Stone that either weighs less than 155 pounds per cubic foot or has more than 2 percent absorption will not be accepted unless other tests and service records show that the stone is satisfactory. The method of tests for unit weight and absorption will be ASTM C 127-88, (R 1993) entitled Specific Gravity and Absorption of Coarse Aggregate." Samples of stone shall be taken by the Contractor under the supervision of the Contracting Officer at least 60 days in advance of the time the placing of the stone is expected to begin. The tests shall be conducted by the Contractor in accordance with applicable Corps of Engineers methods of test given in the Handbook of Concrete and Cement, and shall be performed at an approved testing laboratory. The cost of testing shall be borne by the Contractor.

2.1.3 Gradation Test. The Contractor shall perform a gradation test on Graded Stone C at the quarry in accordance with "LMVD Standard Test Method for Gradation of Riprap", a copy of which is attached at the end of this section. At least one gradation test shall be performed. The sample shall be taken by the Contractor under the supervision of the Contracting Officer, shall consist of not less than 15 tons of stone and shall be collected in a random manner that will provide a sample which accurately reflects the actual gradation arriving at the jobsite. If collected by the truckload, each truckload shall be representative of the gradation requirements. The Contractor shall provide all necessary screens, scales and other equipment, and the operating personnel therefor, and shall grade the sample, all at no additional cost to the Government. The Contractor shall perform at least one gradation test in accordance with ASTM C 136 on the bedding material. The gradation tests shall be reported using LMV Form 602-R, Gradation Test Data Sheet, a copy of which is attached at the end of this section. Additional tests, at the Contractor's expense, will be required if the stone furnished appears by visual inspection to be of questionable gradation.

2.2 BEDDING MATERIAL. Bedding material shall consist of crushed stone. The crushed material shall be composed of tough, durable particles, and shall

be reasonably free from thin, flat and elongated pieces, and shall contain no organic matter nor soft, friable particles in quantities considered objectionable by the Contracting Officer. Grading shall conform to the following requirements:

Permissible Limits

<u>U.S. Standard Sieve</u>	<u>Percent by Weight Passing</u>
3-inch	90-100
1 1/2-inch	35-70
No. 4	0-5

Crushed stone shall be well-graded between the limits shown. All points on individual grading curves obtained from representative samples of bedding material shall lie between the boundary limits as defined by smooth curves drawn through the tabulated grading limits plotted on a mechanical analysis diagram. The individual grading curves within these limits shall not exhibit abrupt changes in slope denoting either skip grading or scalping of certain sizes or other irregularities which would be detrimental to the proper functioning of the bedding layers.

2.3 GRADED STONE C. Quarried rock only shall be used. Gradation shall conform to the tables below and to the gradation curves attached at the end of this section, and formats thereof shall be as shown. Neither the width nor the thickness of any piece shall be less than one-third of its length.

GRADED STONE C

<u>STONE WEIGHT POUNDS(SSD)</u>	<u>CUMULATIVE PERCENT FINER BY WEIGHT</u>
400	100
250	70-100
100	50-80
30	32-58
5	15-34
1	2-20
Less than .5 inch maximum dimension	0-5

5 percent of the material can weigh more than 400 pounds. No piece shall weigh more than 500 pounds.

2.4 GROUT MATERIAL. The materials used in the production and curing of grout for the grouted riprap shall conform to the requirement of SECTION 03300.

PART 3 - EXECUTION

3.1 STONE PROTECTION MATERIALS

3.1.1 GENERAL. The stone protection materials may be placed subaqueously in water depths not to exceed 3 feet and the thickness of the layer shall be

increase by 50 percent. The contractor shall taken measures to allow the subaqueously placement of stone protection materials so that the lines and grade as shown on the drawing are not exceeded.

3.2 BASE PREPARATION. Areas on which the geotextile, crushed stone bedding, and Graded Stone C are to be placed shall be excavated and/or dressed to conform to cross sections shown on the contract drawings within an allowable tolerance of plus 3 inches and minus 3 inches from the theoretical (slope) lines and grades. Where such areas are below the allowable minus tolerance limit they shall be brought to grade by being filled with suitable fill material. No additional payment will be made for any material thus required. Immediately prior to placing the geotextile, crushed stone bedding, and Graded Stone C, the prepared base will be inspected by the Contracting Officer and no material shall be placed thereon until that area has been approved.

3.3 PLACEMENT OF BEDDING LAYER.

3.3.1 General. A bedding layer shall be placed on the prepared base as described in paragraph 02270-3.2, in accordance with the details and within the limits shown on the contract drawings, or staked in the field to form a backing for the stone protection.

3.3.2 Placement of Crushed Stone Bedding Material on Prepared Base. Crushed stone bedding material shall be spread uniformly on the prepared base to the lines and grades as indicated on the contract drawings and in such manner as to avoid damage to the prepared base. Placing of crushed stone bedding material by methods that tend to segregate the particle sizes within the bedding layer will not be permitted. Any damage to the surface of the prepared base during placing of the bedding material shall be repaired before proceeding with the work. Bedding material may be placed subaqueously in water depths not to exceed 1-meter. Compaction of bedding material placed on the prepared base will not be required, but the bedding layer shall be finished to present a reasonably even surface, free from mounds or windrows.

3.4 GRADED STONE C PLACEMENT. Graded Stone C shall be placed in a manner which will produce a reasonably well-graded mass of rock with the minimum practicable percentage of voids, and shall be constructed, within the specified tolerance, to the lines and grades either shown on the contract drawings or staked in the field. A tolerance of not more than plus 6 inches and minus 3 inches for the Graded Stone C from the slope lines and grades shown on the contract drawings will be allowed in the finished surface of the Graded Stone C, except that the extreme of this tolerance shall not be continuous over an area greater than 200 square feet. Graded Stone C shall be placed to its full course thickness in one operation and in such manner as to avoid displacing the bedding material. The larger stones shall be well distributed and the entire mass of stones in their final position shall be graded to conform to the gradation specified in paragraph 2.2. The finished Graded Stone C shall be free from objectionable pockets of small stones and clusters of larger stones. Placing Graded Stone C in layers will not be permitted. Placing Graded Stone C by dumping it into chutes, or by similar methods likely to cause segregation of the various sizes, will not be permitted. Placing Graded Stone C by dumping it at the top of the slope and pushing it down the slope will not be permitted. The desired distribution of the various sizes of stones throughout the mass shall be obtained by selective loading of the material at the quarry or other source, by controlled dumping of successive loads during placing, or by other methods of placement which will produce the specified results. All dump trucks used for placing stone shall be equipped with bottom-hinged tailgates. The gate releasing mechanism shall be arranged so that it may be operated only from a location at or near the front of the truck. Each truckload shall be representative of the

gradation requirements. Rearranging of individual stones by mechanical equipment or by hand will be required to the extent necessary to obtain a reasonably well-graded distribution of stone sizes as specified above. The Contractor shall maintain the Graded Stone C until accepted and any material displaced prior to acceptance and due to the Contractor's negligence shall be replaced at its expense and to the lines and grades shown on the contract drawings.

3.5 GROUTED RIPRAP. Grout shall be composed of cement, water, an air-entraining admixture, and sand, mixed in the proportions of one part cement to 3 parts of sand, sufficient water to produce a workable mixture, and that amount of admixture which will entrain sufficient air to produced durable grout, as approved by the Contracting Officer. The grout shall be mixed in a concrete mixer to produce a mixture having a consistency that will permit gravity flow into the interstices of the riprap with the help of limited spading and brooming. Grout shall be brought to the place of final deposit by methods approved by the Contracting Officer. The grout shall be used in the work within a period of 30 minutes after mixing. Retempering of grout will not be permitted. Riprap shall not be grouted when the ambient temperature is below 40°F or above 85°F unless approved by the Contracting Officer in writing; nor when the grout, without special protection, is likely to be subject to freezing temperatures before final set has occurred. Prior to grouting, all surfaces of riprap shall be cleaned and then wetted. The riprap shall be grouted in successive longitudinal strips, approximately 10 feet in width, commencing at the lowest strip and working up the slope. Each batch of grout shall be dumped on the upper portion of the ungrouted part of the strip and worked into the voids between the stones and down the slope. Immediately after dumping a batch of grout, and in no case shall grout be permitted to flow on the riprap surface a distance in excess of 10 feet, it shall be distributed over the surface of the strip by the use of brooms and the grout worked into place between stones with suitable spades and trowels. Adequate precautions shall be taken to prevent grout from penetrating the bedding layer. As a final operation, the excess grout shall be removed from the top surfaces of the stone protection by use of a stiff broom having bristles resistant to water and capable of withstanding hard sweeping and scrubbing. After completion of any strip as specified, no worker, nor any load, shall be permitted on the grouted surface for a period of at least 24 hours. The grouted surface shall be protected from rain, flowing water and mechanical injury. The surface of all grouted riprap shall be cured for a period of 7 days by a method approved by the Contracting Officer.

3.5.1 Maintenance. The Contractor shall maintain the grouted riprap until accepted, and any material displaced prior to acceptance and due to the Contractor's negligence shall be replaced to the lines and grades shown on the drawings, at no additional cost to the Government.

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STANDARD TEST METHOD FOR GRADATION OF RIPRAP

- A. Select a representative sample (Note No. 1), weigh and dump on hard stand.
- B. Select specific sizes (see example) on which to run "individual weight larger than" test. (See Note No. 2). Procedure is similar to the standard aggregate gradation test for "individual weight retained."
- C. Determine the largest size stone in the sample. (100 percent size)
- D. Separate by "size larger than" the selected weights, starting with the larger sizes. Use reference stones, with identified weights, for visual comparison in separating the obviously "larger than" stones. Stones that appear close to the specific weight must be individually weighed to determine size grouping. Weigh each size group, either individually or cumulatively.
- E. Paragraph d above will result in "individual weight retained" figures. Calculate individual percent retained (heavier than), cumulative percent retained, and cumulative percent passing (lighter than). Plot percent passing, along with the specification curve on Eng Form 4055.

Notes

1. Sample Selection. The most important part of the test and least precise is the selection of a representative sample. No "standard" can be devised; larger quarry run stone is best sampled at the shot or muck pile by given direction to the loader; small graded riprap is best sampled by random selection from the transporting vehicles. If possible, all parties should take part in the sample selection, and agree before the sample is run, that the sample is representative.
2. Selection of Size for Separation. It is quite possible and accurate to run a gradation using any convenient sizes for the separation, without reference to the specifications. After the test is plotted on a curve, the gradation limits may be plotted. Overlapping gradation with this method are no problem. It is usually more convenient, however, to select points from the gradation limits, such as the minimum 50 percent size, the minimum 15 percent size, and one or two others, as separation points.

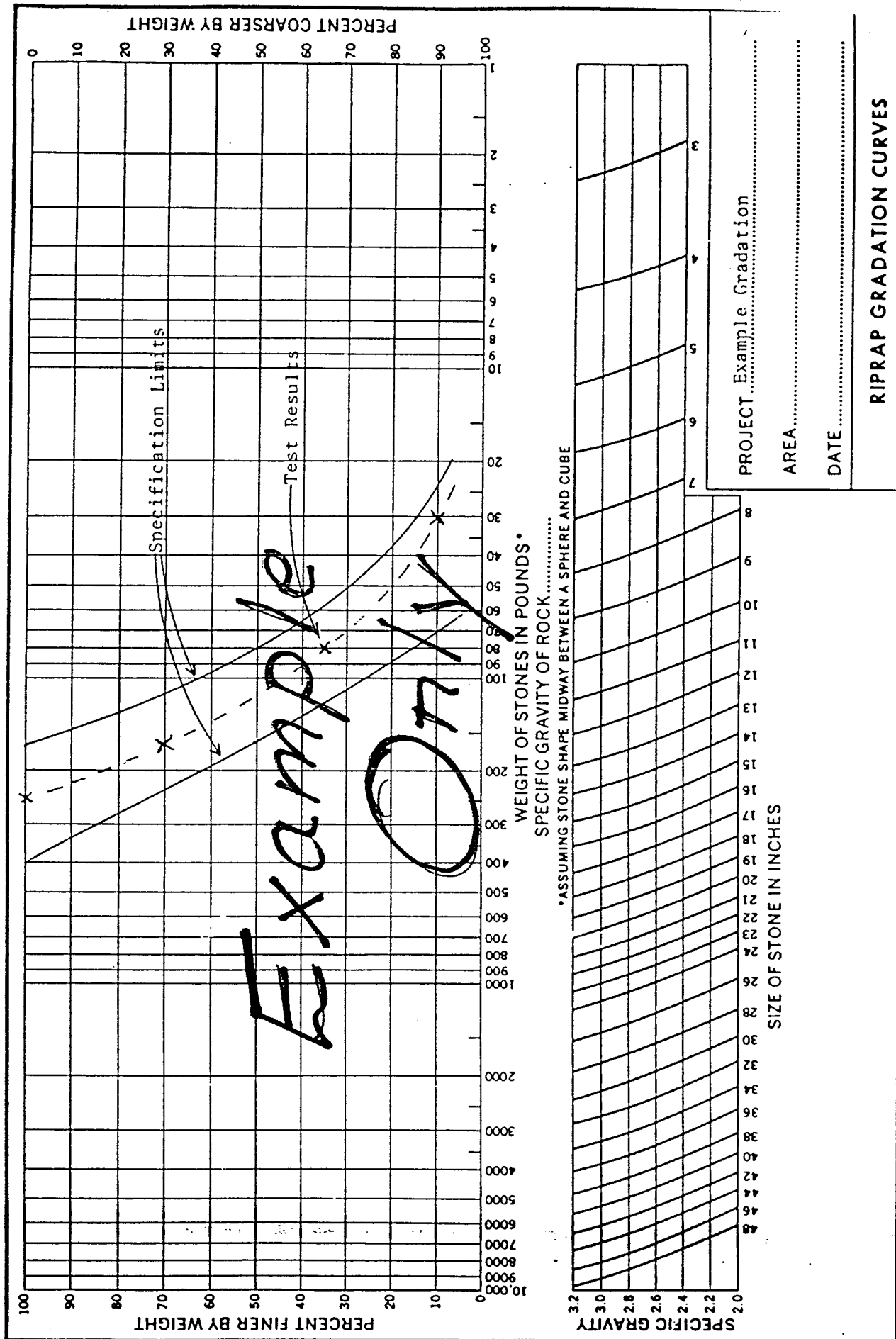
Example GradationSpecifications

<u>Stone Weight in Lbs</u>	<u>Percent Finer by Weight</u>
400-160	100
160-80	50
80-30	15

Example Worksheet

<u>Stone Size Lbs</u>	<u>Individual Wt. Retained</u>	<u>Individual Percent Retained</u>	<u>Cumulative Percent Retained</u>	<u>Cumulative Percent Passing</u>
400	0	0	-	100
160	9,600	30	30	70
80	11,200	35	65	35
30	8,000	25	90	10
30	<u>3,200</u>	10	100	-
	32,000 lbs			

NOTE:
Largest stone 251 lbs



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GRADATION TEST DATA SHEET

Sample No. : _____
 Type of _____
 Stone Tested _____
 Quarry _____
 Date of Test _____ Testing Rate _____ Tons
 Contractor _____ Location _____

TEST REPRESENTS

Contract No.[illegible]

GRADATION

**Stone Size
(lbs)**

Total Weight					

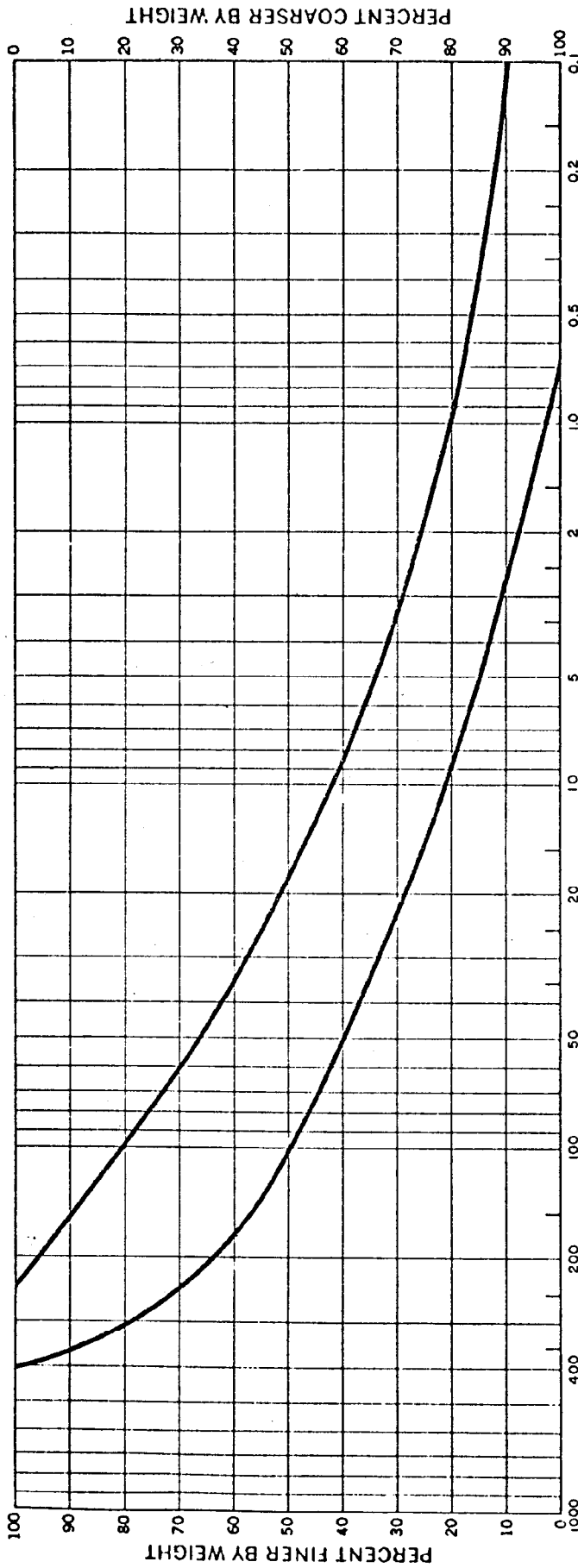
Remarks: _____

I certify that the above stone sample is representative of the total tonnage covered by this test report:

Contractor Representative _____

Government Representative _____

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STONE WEIGHT

(LBS)

- 400
- 250
- 100
- 30
- 5
- 1

less than 1/2" max dimension

CUMULATIVE %

FINER BY WEIGHT

- 100
- 70 - 100
- 50 - 80
- 32 - 58
- 15 - 34
- 2 - 20
- 0 - 5

NOTE: 5% of the material can weigh more than 400 pounds. However no piece shall weigh more than 500 pounds.

GRADATION

GRADED STONE C

September 1976

PLATE IV

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02610.1

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SECTION 02610 - CULVERT PIPE

PART 1 GENERAL

1.1 SCOPE. The work covered by this section consists of furnishing all plant, labor, materials, and equipment, and performing all operations in connection with the installation of the 36-inch CMP culvert pipes with end sections, the 42-inch diameter CMP culvert pipes with end sections, the 48-inch diameter CMP culvert pipes with an end section and a 48-inch flap gate, the 60-inch diameter CMP culvert pipes with end sections, and the riser structures, as well as all appurtenances as shown on the drawings and specified herein. Concrete for the base slab of the riser structures is specified in SECTION 03300.

1.2 QUALITY CONTROL.

1.2.1 General. The Contractor shall establish and maintain quality control for all operations to assure compliance with contract requirements and maintain records of quality control for all construction operations, including but not limited to the following:

- (1) Materials
- (2) Equipment
- (3) Installation.

1.2.2 Reporting. A copy of these records, as well as the records of corrective action taken, shall be furnished to the Government daily.

1.3. REFERENCES. The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by the references thereto:

1.3.1 Illinois Standard Specifications. References to Sections and Articles pertaining to pipe culverts and appurtenances, are to the "Illinois Standard Specifications for Road and Bridge Construction", adopted January 1, 2002. The term "engineer" as used therein shall be interpreted to mean "Contracting Officer".

1.3.2 American Association of State Highway and Transportation Officials (AASHTO).

M 274-87	Steel Sheet Aluminum-Coated (Type 2) for Corrugated Steel Pipe
----------	---

1.3.3 American Institute of Steel Construction (AISC).

ASD 9th Edition	(1989) Manual of Steel Construction - Allowable Stress Design
-----------------	--

1.3.4 American Society of Mechanical Engineers (ASME).

- | | |
|--------------------------|--|
| B 18.2.2-87
(R 1993) | Square and Hex Nuts (Inch Series) |
| B 18.22.1-65
(R 1990) | Plain Washers |
| B 36.10-85 | Welded and Seamless Wrought Steel Pipe |

1.3.5 American Society for Testing and Materials (ASTM).

- | | |
|----------------------|--|
| A 36/A 36M-96 | Carbon Structural Steel |
| A 307-94 | Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength |
| A 742-93 | Steel Sheet Metallic-Coated and Polymer Precoated for Corrugated Steel Pipe |
| A 760-93
(Rev. A) | Corrugated Steel Pipe, Metallic-Coated, for Sewers and Drains |
| D 1056-91 | Flexible Cellular Materials-Sponge or Expanded Rubber |
| D 1171-94 | Rubber Deterioration - Surface Ozone Cracking Outdoors or Chamber (Triangular Specimens) |
| E 84-91
(Rev A) | Surface Burning Characteristics of Building Materials |

1.3.6 American Welding Society (AWS).

- | | |
|----------|---------------------------------|
| D 1.1-94 | Structural Welding Code - Steel |
|----------|---------------------------------|

1.4. SUBMITTALS.

1.4.1 Shop Drawings. The Contractor shall submit to the Contracting Officer, for approval, shop drawings showing principal dimensions, general construction, installation details, connection details and materials used for the culvert pipes, coupling band, gaskets, riser structures, stoplogs, flap gate, `end sections, support beams for the grating, grating and ladder all to be manufactured, furnished and installed in accordance with these drawings after they have been approved by the Contracting Officer. All submittals shall be in accordance with SECTION 01300.

1.4.1 Certificates; FIO. Certificates of compliance attesting that the materials meet specification requirements shall be submitted along with manufacturer's data for the culvert pipe.

PART 2 PRODUCTS

2.1 CULVERT PIPE AND APPURTENANCES.

2.1.1 General. The Contractor shall verify all measurements and shall take all field measurements necessary before fabrications. Materials and parts necessary to complete each item, even though such work is not definitely shown or specified, shall be included. Miscellaneous bolts and anchors, supports, braces, and connections necessary for attachment of appurtenances and miscellaneous work shall be provided. The necessary fittings, lugs, and brackets shall be provided so that the work can be assembled in a neat and substantial manner. Holes for bolts and screws shall be drilled or punched. Poor matching of holes shall be cause for rejection. Fastenings shall be concealed where practicable. Joints exposed to the weather shall be formed to exclude water.

2.1.2 Fasteners.

2.1.2.1 Stainless Steel Bolts.

2.1.2.2 Square and Hex Nuts. ASME B 18.2.2.

2.1.2.3 Standard and Special Bolts. Bolts and nuts shall conform to ASTM A 307 and shall be zinc-coated unless otherwise specified.

2.1.2.4 Washers. Washers shall conform to ASME B 18.22.1, galvanized, heavy series, unless otherwise indicated or required.

2.1.3 Culvert Pipe. Culvert pipe shall be 16-gage. Culvert pipes shall be in conformance with the applicable articles of SECTION 542, PIPE CULVERTS, Corrugated Aluminum Alloy, Class D, and shall be 36-inches, 42-inches, 48-inches or 60-inches in diameter.

2.1.4 Metal End Sections. The culvert pipe end sections shall be in conformance with the applicable articles of SECTION 542, PIPE CULVERTS, and shall be the same base material as the culvert pipe.

2.1.5 Coupling Bands. Coupling bands shall be watertight type and of the same base metal, coating and construction as specified in 2.3. The coupling bands shall be the rod and lug type with 1/2-inch diameter circumferential rods and cast iron, silo-type lugs. The bands shall not be less than 18 inches wide. The bands shall provide a minimum circumferential lap of 3-inches and be formed to fit and mesh with the corrugations of the pipe. There shall be one circumferential rod and lug for each corrugation on the band. The circumferential rods, lugs and nuts shall be galvanized after fabrication.

2.1.6 Rubber Gaskets. The gaskets shall conform to ASTM D 1056, Grade SBE 43 or SCE 43.

2.1.7 Flap Gate. The flap gate shall be 48-inch diameter, spigot back, double hinge and designed for attachment to the end of a corrugated metal pipe

(CMP). The flap gate shall be designed to a minimum seating head pressure of 10 feet. The flap and seat shall be of cast iron with the seating surface being of carbon steel. Hinge arms shall be galvanized steel with bronze bushings at the pivot points. All hardware bolts and fittings shall be galvanized steel.

2.1.7.1 Painting. The flap gate shall be cleaned to near white metal in accordance with SSPC SP 10 and painted in the manufacturer's plant to a minimum thickness of 16 mils with coal tar epoxy (black) paint conforming to SSPC Paint 16. Touch-up paint shall be furnished and applied to breaks in the coating after installation. The flap gate may be painted with a complete coating system in accordance with the manufacturer's standard practice, provided the coating system is approved by the Contracting Officer, is of acceptable color and is touched up as necessary prior to shipment. Requests for such exemption shall be accompanied by a description of the manufacturer's standard coating system, including surface preparation, type of primer and finish coat or coats, dry film thickness and whether baked-on or air-dried. The gate hoist shall be painted with a complete coating system in accordance with the manufacturer's standard practice. The coating system to be used shall be submitted to the Contracting Officer for approval.

2.1.8 Riser Structure. The riser structures shall be of the same base material as the culvert pipe and of the diameter as shown on the plans. The riser structures shall be of sufficient thickness, as determined by the manufacturer, to support and withstand all loads and forces to which they will be subjected such as from gates, grating design load, ladders, and all connections. A culvert pipe stub shall be attached to the riser structure by a continuous weld at the manufacture. The stoplog riser structures shall include all stoplog boards necessary to completely stop flow to the top of the structure. Stoplog boards are per the manufacture's requirements

2.1.8.1 Stop logs. The stop logs shall be 2-inches by 6-inches, tongue and grooved, wolmanized yellow pine boards. Width of the stoplogs shall be as manufacture's specifications.

2.1.9 Grating and Ladder.

2.1.9.1 Grating and Grating Support Design Requirements. Grating, grating support members and brackets, and connections of supporting items to the risers shall be designed by the grating manufacturer. They shall be designed for a combined load of 100 pounds per square foot applied over the entire grating platform plus a concentrated load of 500 pounds applied to cause maximum bending stresses in each grating panel. The maximum design load deflection of the grating and all grating support members shall be limited to 1/4 inch at any location.

2.1.9.2 Grating. Grating shall be of the type and size specified or shown on the drawings and shall be fabricated to fit accurately the supporting framing. The grating shall be galvanized and of welded steel construction, in accordance with SECTION 05500 - MISCELLANEOUS METAL MATERIALS, STANDARD ARTICLES, AND SHOP FABRICATED ITEMS. Installation clearances and bearing shall be in accordance with the grating manufacturer's recommendations.

Grating shall be fastened in place with galvanized hold-down clips, with the type of fasteners and fastener locations recommended by the grating manufacturer and approved by the Contracting Officer.

2.1.9.3 Grating Support Members. The grating support framing and brackets shall be galvanized steel meeting the requirements of ASTM A 36. Materials and fabrication shall meet the requirements of SECTION 05100 - METALWORK FABRICATION AND MISCELLANEOUS PROVISIONS and SECTION 05500 - MISCELLANEOUS METAL MATERIALS, STANDARD ARTICLES, AND SHOP FABRICATED ITEMS. Galvanized steel framing and brackets shall be designed in accordance with AISC ASD 9th Edition. Grating support framing and brackets shall be furnished and installed complete with all fasteners, anchors and other appurtenances as required for proper installation. Galvanized surfaces damaged by welding shall be repaired in accordance with SECTION 05100. Connection of support brackets to the riser pipe, including materials and methods used, shall be in accordance with the recommendations of the pipe manufacturer and shall be approved by the Contracting Officer.

2.1.9.4 Ladder. Ladder members, including square tubes, rungs, connecting angles and channels shall be fiberglass roving reinforced polyester. Ladder members shall be Class 1 fire retardant with an ASTM E 84 flame spread rating of 25 maximum. Rungs shall be coated with an epoxy glass bead non-skid surface. Ladder members, connections and support connections shall be designed by the ladder manufacturer and shall be furnished and installed complete with all fasteners, anchors, and other appurtenances as required for proper installation. The ladder shall be anchored to the concrete base slab and the top of the riser pipe. The Contractor shall submit with the shop drawings for the riser structure the complete ladder design.

PART 3 EXECUTION

3.1 PIPE INSTALLATION. The culvert pipes shall be installed to the applicable articles of SECTION 542, PIPE CULVERTS. Excavation for the corrugated metal pipe culverts shall be to the lines and grades shown on the drawings. Under no circumstances shall pipe be laid in water, and no pipe shall be laid when trench conditions or the weather are unsuitable for such work. The inspector shall carefully inspect each pipe immediately before it is laid and defective pipe will be rejected. Proper facilities shall be provided for lowering sections of pipe, and the pipes shall be cleaned and lowered into position in such a manner as to avoid unnecessary handling or damage to the pipe or its coating. The pipes shall be laid on a firm foundation to the grades and alignment shown on the drawings. Each section of pipe shall rest upon the pipe bed for its full length with recesses excavated to accommodate the joints or couplings. Any pipe that has its grade or joint disturbed after laying shall be taken up and relaid. Any section of pipe already laid which is found to be defective or damaged shall be taken up and re-laid or replaced as directed by the Contracting Officer, without additional cost to the Government. After the joints are completed and prior to placing geotextile, surfaces to receive the geotextile shall be coated with bituminous cement to hold the geotextile in place. All pipe joints shall be wrapped with geotextile for a distance of 3 feet each side of the joint. The geotextile

shall be placed smooth and free of tension, stress folds, wrinkles, or creases. The geotextile wrapping shall be overlapped and secured to prevent displacement during backfill operations. At the time of installation, the geotextile shall be rejected if it has defects, rips, holes, flaws, deterioration or damage incurred during manufacture, transportation, storage or installation at no additional cost to the Government. The surface to receive the geotextile shall be prepared to a relatively smooth condition, free of obstructions, and debris. The geotextile shall be protected at all times during construction from contamination by surface run-off and any geotextile so contaminated shall be removed and replaced with uncontaminated geotextile. Geotextile damaged during the installation process shall be replaced by the Contractor at no cost to the Government. Geotextile is specified in SECTION 02240 - GEOTEXTILE. Backfill shall be placed as specified in IDOT specification SECTION 542 PIPE CULVERTS, all applicable articles.

3.2 RUBBER GASKETS. Gaskets for circular pipe having not more than 5 percent ellipse shall be made of 3/8-inch thick closed cell, expanded synthetic rubber, fabricated in the form of a cylinder with a diameter approximately 10 percent less than the nominal pipe size. The width of the gasket should be 1/2-inch less than the width of the coupling band. The gasket material shall conform to paragraph 2J-5.5 and shall have a quality retention rating of not less than 70 percent when tested for weather resistance by ozone chamber exposure, Method B of ASTM D 1171. Installation shall be as recommended by the gasket manufacturer for use of lubricants and cements and other special installation requirements. The gasket shall be placed over one end of a section of pipe for half the width of the gasket and the other half shall be doubled over the end of the same pipe. When the adjoining section of pipe is in place, the doubled-over half of the gasket shall then be rolled over the adjoining section. Any unevenness in overlap shall be corrected so that the gasket covers ends of the pipe sections equally. Coupling bands shall then be centered over adjoining sections of pipe, and rods or bolts placed in position and nuts tightened evenly with even tension kept on rods or bolts.

3.3 END SECTION INSTALLATION. The culvert pipe end sections shall be installed to the applicable articles of SECTION 542, PIPE CULVERTS.

3.4 RISER STRUCTURE INSTALLATION. The riser structure installation shall be as per the manufacturer's recommendation.

3.5 FLAP GATE INSTALLATION. Installation of the flap gate and appurtenances shall be in accordance with the manufacturer's installation instructions. The flap gate shall be cleaned of all protective coating used thereon during shipment and storage, and rust, dirt, grit and other foreign matter shall be removed.

02740.1

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SECTION 02740
BITUMINOUS CONCRETE PAVEMENT

PART 1 - GENERAL

1.1 SCOPE. The work covered by this section consists of furnishing all plant, labor, materials and equipment, and performing all operations necessary to complete the work as shown on the drawings and as specified herein.

1.2 QUALITY CONTROL.

1.2.1 General. The Contractor shall establish and maintain quality control for all operations to assure compliance with contract requirements and maintain records of quality control for all construction operations, including but not limited to the following:

1.3 REFERENCES. The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by the references thereto:

1.3.1 American Society for Testing and Materials (ASTM).

D 2172-95	Quantitative Extraction of Bitumen from Bituminous Paving Mixtures
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1.3.3 Illinois Department of Transportation (IDOT). The material for, and construction of the bituminous concrete pavement shall conform to the provisions of the hereinafter cited sections and, as specified articles of the IDOT, "Standard Specifications for Road and Bridge Construction", and "Standard Plans" adopted January 1, 2002 except as noted herein. The term "Engineer" as used therein shall be interpreted to mean "Contracting Officer."

1.4 SUBMITTALS. Government approval is required for submittals with a GA designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with SECTION 01300 SUBMITTAL PROCEDURES:

1.4.1 Statements. Job Mix Design; GA. Submit not later than 30 days prior to the laying of bituminous concrete the job mix design to be used on the project, prepared in accordance with Article 407.

1.4.2 Certificates. FIO. A certificate of inspection shall be submitted for each shipment of bituminous concrete used in the work.

PART 2 - PRODUCTS

2.1 BITUMINOUS CONCRETE PAVEMENT.

2.1.1 General. This work shall consist of the construction of a bituminous concrete surface course on a prepared base, constructed to the lines, grades, and thickness at the locations indicated on the plans or as directed by the Contracting Officer. Bituminous concrete pavements shall meet the requirements of Section 407, BITUMINOUS CONCRETE PAVEMENT (FULL-DEPTH), except as noted herein.

2.1.2 Materials. Materials used in the production of the bituminous concrete pavement shall meet the applicable requirements of IDOT specification SECTION 407.

2.1.3 Equipment and Construction. Equipment used in the production and placement of the bituminous concrete pavement shall meet the requirements of IDOT specification SECTION 407. Construction methods shall meet the requirements of IDOT specification SECTION 407.

2.1.4 Job Mix Design. Mix designs for the specific mixes called for on the plans shall be established by the Illinois Department of Transportation (IDOT) or by the Contractor at his/her option as specified in IDOT specification SECTION 407. Mix designs provided by IDOT will be acceptable provided the same material sources are used for the materials included in the mix. In the event a job mix design is not available from IDOT the Contractor shall be responsible for the design of the bituminous mixes.

PART 3 - EXECUTION

3.1 PREPARATION OF BITUMINOUS MIXTURES. Bituminous concrete pavement material shall be produced in accordance with IDOT specification SECTION 407-BITUMINOUS CONCRETE PAVEMENT (FULL-DEPTH), by a plant certified by the IDOT for the production of hot mix asphalt products.

3.1.2 TRANSPORTATION. Transportation of bituminous surface plant mix to the job site shall be in accordance with IDOT specification SECTION 407.

3.2.3 PLACING, COMPACTION, AND JOINTS. Placing of bituminous surface plant mix, compaction methods and requirements and joint construction shall be in accordance with IDOT specification SECTION 407.

3.2.4 SMOOTHNESS AND THICKNESS TESTING. After completion of the bituminous concrete pavement, the surface shall be tested for grade and smoothness. The surface shall have a smooth surface across the width of the cutout area. Pavement areas with a surface variation exceeding a 1/4-inch shall have the top 2-inches removed and replaced by the Contractor.

-- END OF SECTION 02740 --

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SECTION 02840
STAFF GAGES

PART 1 - GENERAL

1.1 SCOPE. The work covered by this section consists of furnishing all plant, labor, equipment, and materials necessary to provide staff gages specified herein and as indicated on the drawings.

1.2 REFERENCES. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

1.2.1 AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME).

ASME B18.2.1-81 Square and Hex Bolts and Screws (Inch Series)
(Supple R 1992)

ASME B18.3-86 Socket Cap, Shoulder and Set Screws (Inch
(R 1995) Series) Including Dimensions of Hexagon and
Spline Sockets and Keys to Match

ASME B18.6.2-72 Slotted Head Cap Screws, Square Head Set Screws,
(R 1993) and Slotted Headless Set Screws

ASME B18.6.3-72 Machine Screws and Machine Screw Nuts
(R 1997)

1.2.2 American Society for Testing and Materials (ASTM).

A 36/A 36M (1996) Carbon Structural Steel

ASTM A 53/A 53M (2001) Pipe, Steel, Black and Hot-Dipped,
Zinc-Coated, Welded and Seamless

1.3 SUBMITTALS. Government approval is required for all submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with SECTION 01300 - SUBMITTAL PROCEDURES:

1.3.1 Drawings.

1.3.1.1 Detail Drawings; FIO. Detail drawings for metalwork shall be submitted prior to fabrication. Detail drawings for metalwork shall include catalog cuts, templates, fabrication and assembly details and type, grade and class of material as appropriate. Elements of fabricated items inadvertently omitted on contract drawings shall be detailed by the fabricator and indicated on the detail drawings.

1.3.1.2 Staff Gages; FIO. Detail drawings and sketches showing final staff gage locations shall be submitted.

1.3.2 Data.

1.3.2.1 Manufacturer's Literature; GA. The Contractor shall submit manufacturer's product literature, including material properties and design load and spacing information and recommendations for adhesive anchor systems.

1.3.2.2 Concrete; GA. The Contractor shall submit all data for concrete used for placement of Type 2 staff gages in accordance with Paragraph 02840-2.2.

1.3.3 Schedules.

1.3.3.1 Materials Orders; FIO. The Contractor shall furnish 2 copies of purchase orders, mill orders, shop orders and work orders for all materials and items used in the work. These copies shall be submitted prior to the use of the materials and items in the work. Where mill tests are required, purchase orders shall contain the test site address and the name of the testing agency.

1.3.3.2 Materials List; GA. Materials list of materials to be used in the fabrication of each item shall be submitted at the time of submittal of detail drawings.

1.3.3.3 Shipping Bill; FIO. The Contractor shall furnish a shipping bill or memorandum of each shipment of finished pieces or members to the project site giving the designation mark and weight of each item, the number of items, the total weight, and the car initial and number if shipped by rail in carload lots.

PART 2 - PRODUCTS

2.1 METAL MATERIALS AND STANDARD ARTICLES. Metal materials and standard metal articles shall conform to the respective specifications and other designated requirements. Sizes shall be as specified or shown. Where material requirements are not specified, materials furnished shall be suitable for the intended use and shall be subject to approval. Where not indicated otherwise, materials shall comply with the following.

2.1.1 Carbon Grade Steel. Unless otherwise indicated, all shapes shall be steel conforming to ASTM A 36. and shall be galvanized.

2.1.2 Steel Pipe. Steel Pipe shall conform to ASTM A 53, Type E, Grade B.

2.1.3 Screws. Screws shall be of the material, grade, type, style, and finish indicated or best suited for use intended.

2.1.3.1 Cap Screws. ASME B18.2.1, ASME B18.3, or ASME B18.6.2 as required.

2.1.3.2 Machine Screws. ASME B18.6.3.

2.2 CONCRETE. At the Contractor's option, concrete for Type 2 staff gages may be ready-mixed concrete, or a commercially-available sack mix, suitable for the intended purpose and mixed on-site by the Contractor. If ready-mixed is used, the Contractor shall provide the name and address of the concrete supplier, mix design used and compressive strength. If a sack mix is used, the Contractor shall provide the product name and ingredient data and manufacturer's recommendations for mixing, placing and curing. The proposed option shall be approved by the Contracting Officer prior to placement.

PART 3 - EXECUTION

3.1 GENERAL FABRICATION REQUIREMENTS. Structural steel fabrication shall meet the requirements of SECTION 05100 - METALWORK FABRICATION AND MISCELLANEOUS PROVISIONS.

3.2 STAFF GAGE FABRICATION. Materials for staff gages shall conform to applicable provisions as indicated herein. Details of staff gages are as shown on the drawings. Each staff gage shall consist of a galvanized steel tee, with porcelain enameled gage sections fastened to the steel. The tee section shall be mounted inside a standard weight Type B steel pipe conforming to ASTM A 53. The tee shall not touch the interior of the pipe. The pipe shall be installed in the ground as shown on the drawings. All pipe shall be galvanized.

3.3 STAFF GAGE INSTALLATION.

3.3.1 General. Staff gages shall be installed after, in the opinion of the Contracting Officer, all work that could damage the gages has been completed. Gages shall be installed on a true vertical line. Gages shall be installed at the locations shown on the contract drawings.

3.3.2 Excavation. Excavation for staff gages shall be of the dimensions shown on the drawings. Post holes shall be cleared of loose material. Waste material shall be spread where directed or removed from the site.

3.3.3 Pipes. The pipe sleeves for staff gages shall be installed in a vertical position in concrete footings as shown on the drawings.

3.3.4 Staff Gages. The top of each gage shall be set at the elevations shown on the drawing. The tee shall be set to grade in the pipe sleeve with concrete as detailed on the drawings.

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SECTION 02900 - ESTABLISHMENT OF TURF

PART 1 GENERAL

1.1 SCOPE. The work covered by this section consists of furnishing all plant, labor, equipment, and materials, and performing all operations necessary for seeding, fertilizing, mulching and liming the areas as specified herein and as shown on the drawings.

1.1.1 When all work under this contract is completed except work required under this section, and such work is not performed because of seasonal limitations stated in 02900-1.4, or because of conditions occurring within the specified seeding seasons which, in the opinion of the Contracting Officer, are unfavorable for such work, the time for completion will be extended by the number of calendar days that this work is thereby delayed.

1.2 QUALITY CONTROL.

1.2.1 General. The Contractor shall establish and maintain quality control for all operations herein specified to assure compliance with contract specifications and shall maintain records if its quality control for all construction operations including, but not limited to, the following:

- (1) Preparation of ground surface
- (2) Seeding
- (3) Fertilizing
- (4) Mulching
- (5) Watering.

1.2.2 Reporting. A copy of these records and tests, as well as the records of corrective action taken, shall be furnished to the Government daily.

1.3 AREAS TO BE TREATED. Turf shall be established on new embankment areas and disturbed areas surrounding each structure location. This includes all new embankments not covered by stone protection or road surfacing, areas where earth material has been wasted near the structures, and all disturbed areas that the Contractor has made during his construction activities. The borrow areas shall not be seeded.

1.4 COMMENCEMENT, PROSECUTION, AND COMPLETION. Seeding operations shall be performed between 15 March and 15 May or between 15 August and 30 September. All embankment which is completed, prior to, or after expiration of the seeding seasons, shall be protected from eroding, as approved by the Contracting Officer, until the next seeding season occurs. Seed, fertilizer, limestone and mulch shall be applied as herein specified and in accordance with standard horticultural practices for establishing new turf.

1.5 SUBMITTALS. Government approval is required for submittals with a GA designation; submittals having an "FIO" designation are for information only. The following shall be submitted to the Contracting Officer in accordance with SECTION 01300 - SUBMITTAL PROCEDURES:

1.5.1 Reports; FIO. Soil test results, including application rates of fertilizer and limestone.

PART 2 PRODUCTS

2.1 MATERIALS.

2.1.1 Seed. Seed shall be a fresh new crop and furnished in sealed containers. Wet, moldy or otherwise damaged seed will not be acceptable. Seed shall further conform to the following:

<u>Kind of Seed</u>	<u>Pounds Per Acre</u>	<u>Min. Purity</u>	<u>Min. Germination</u>	<u>Max. Weed Content</u>
Perennial Rye Grass	75	98	85	0.8
Smooth Brome	8	98	85	0.8
Red Top	5	98	85	0.8

2.1.2 Fertilizer. Fertilizer shall be uniform in composition and free flowing. Fertilizer shall meet the requirements of the State of Illinois for Commercial Fertilizer. The amount of fertilizer to be used shall be determined by soil analysis and testing by a recognized testing agency which regularly engages in this type of work.

2.1.3 Limestone. Limestone shall be approved agricultural grade limestone containing not less than 85 percent total carbonates. The quantity of lime required shall be determined by soil tests as specified in 02900-3.1.

2.1.4 Water. Water shall be free from oil, acid, alkali, salt, etc. and shall be from an approved source prior to use.

2.1.5 Mulch. Threshed straw from a cereal grain such as oats, wheat, barley, or grass hay shall be used. Mulch shall not contain noxious grass or weed seeds. Mulch shall be uniformly applied at the rate of 2 tons per acre.

2.1.5.1 Mulch Stabilizers. To stabilize mulch, the Contractor may embed the mulch or use an approved disk-type roller having flat serrated disks spaced not more than 10 inches apart and equipped with cleaning scrapers.

2.1.6 Erosion Control Blanket. Erosion Control Blanket shall be in accordance with IDOT Standard Specifications for Road and Bridge Construction, Adopted January 1, 2002; SECTION 1081.10 SPECIAL EROSION CONTROL MATERIALS, installed in accordance with manufacturer's recommendations.

PART 3 EXECUTION

3.1 TESTING. Soil tests shall be made as the basis to determine the proper amount of fertilizer and limestone to be applied. The soil test shall be the responsibility of the Contractor and performed at no additional cost to the Government. Soil shall be tested by a recognized testing laboratory and copies of the test results shall be furnished to the Contracting Officer. Tests shall recommend application rates for nitrogen, phosphorous, potash and limestone.

3.2 INSPECTION AND ACCEPTANCE. Acceptance of seeded areas will be based upon having a dense, well-rooted turf, capable of preventing all erosion. Grass areas, which show signs of erosion, ruts, etc., will not be acceptable. Seeded areas shall be mowed to a height of 3 inches immediately prior to inspection.

03300.1

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SECTION 03300
CONCRETE

PART 1 - GENERAL

1.1 SCOPE. The work covered by this section consists of furnishing all material and equipment, and performing all labor for the manufacture, transporting, placing, finishing, and curing of concrete and concrete joints in these specifications. The extent of concrete work is as shown on the drawings.

1.2 QUALITY CONTROL.

1.2.1 General. The Contractor shall establish and maintain quality control for all operations to assure compliance with contract requirements and maintain records of quality control for all construction operations, including but not limited to the following:

- (a) Forms (line and grade, mortar tightness, bracing, and embedded items).
- (b) Placement (lifts, vibrating).
- (c) Finishing.
- (d) Curing.
- (e) Aggregate Gradations.
- (f) Reinforcing.
- (g) Concrete mixture.
- (h) Slump Testing.
- (i) Air Content Testing.
- (j) Concrete Cylinders.
- (k) The laboratory performing the tests shall conform to ASTM E 329 and perform tests in accordance with applicable requirements of ASTM Standards.

1.2.2 Reporting. A copy of these records and tests, as well as the records of corrective action taken, shall be furnished to the Government daily.

1.3 REFERENCES. All referenced publications shall be the most current version, edition, standard, latest revision, or reapproval unless otherwise stated. The publications and standards listed below will be referred to only by the basic designation, and shall form a part of this specification to the extent indicated by the references thereto:

1.3.1 American Society for Testing and Materials (ASTM).

- | | |
|-------------|--|
| A 185 | Steel Welded Wire Fabric, Plain,
for Concrete Reinforcement |
| A 615/A 615 | Deformed and Plain Billet-Steel Bars for Concrete
Reinforcement |
| C 31 | Making and Curing Concrete Test Specimens in the Field |
| C 33 | Concrete Aggregates |
| C 39 | Compressive Strength of Cylindrical Concrete Specimens |
| C 94 | Ready-Mixed Concrete |
| C 143 | Slump of Hydraulic Cement Concrete |

C 150	Portland Cement
C 171	Sheet Materials for Curing Concrete
C 172	Sampling Freshly Mixed Concrete
C 231	Air Content of Freshly Mixed Concrete by the Pressure Method
C 260	Air-Entraining Admixtures for Concrete
C 309	Liquid Membrane-Forming Compounds for Curing Concrete
C 494	Chemical Admixtures for Concrete
C 920	Elastometric Joint Sealants
D 1752	Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction
E 329	Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

1.3.2 American Concrete Institute (ACI).

ACI 318 Building Code Requirements for Structural Concrete

1.3.3 American Association of State Highway and Transportation Officials (AASHTO).

AASHTO M 182 Burlap Made From Jute or Kenaf

1.4 EVALUATION AND ACCEPTANCE. The strength of the concrete will be considered satisfactory so long as the average of all sets of three consecutive individual strength tests (average of two cylinders) equal or exceed the required specified strength f'c and no individual strength test (average of two cylinders) falls below the specified strength f'c by more than 500 pounds per square inch.

1.5 SUBMITTALS. Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with SECTION 01300 SUBMITTAL PROCEDURES.

1.5.1 Data. Materials; FIO. Submit manufacturer's literature showing that the following materials conform to the specified requirements. Manufactures literature shall be dated less than 2 months from time of submittal:

- (a) Air-entraining agent
- (b) Water reducing admixture
- (c) Curing materials
- (d) Reinforcing steel (Mill Certificates)
- (e) Forming accessories
- (f) Joint material
- (g) Non-shrink grout

1.5.2 Statements. Concrete Mix Proportions; GA. The proportions of the concrete materials in the mix shall be the responsibility of the

Contractor. Prior to placement of concrete, the Contractor shall submit mixture proportions to be used during construction, which will produce concrete of the qualities required along with the source of concrete. Mixture proportions shall include dry weights of cement, saturated surface-dry weights of fine and coarse aggregates, and quantities, type and name of admixtures and total quantity of water per cubic yard of concrete. Also satisfactory evidence shall be given that the materials to be used and the proportions selected will produce concrete of the quality specified. All materials included in the mixture proportions shall be of the same type and from the same source as will be used on the project.

1.5.3 Certificates. Cementitious and Aggregate Materials; FIO. Submit manufacturer's certificate of compliance for cementitious and aggregate materials. Certificates shall be dated less than 2 months from time of submittal.

1.5.4 Testing Plan; GA. The Contractor shall submit a detailed plan for testing the concrete, coarse and fine aggregate, concrete mixer uniformity, curing, and the concrete plant inspection. The detailed plan shall include but not limited to the location and number of each tests and inspections, sampling procedures, and reporting forms, action for each that will be taken if the results do not meet the specifications and the responsible parties for each step. The name and certificate of the individuals who sample and test concrete as required in paragraph 3.8.1.

1.5.5 Reports. Expansion Joint Filler, Sealants, GA. Certified manufacturer's test reports and compliance certificates shall be provided for premolded expansion joint filler strips and sealants, to verify compliance with the applicable specification.

1.5.6 Samples. FIO.

1.5.6.1 Field-Molded Sealant and Primer. One gallon of field-molded sealant and one quart of primer (when use of primer is recommended by the sealant manufacturer) shall be provided for testing, as directed by the Contracting Officer.

PART 2 - PRODUCTS

2.1 MATERIALS.

2.1.1 Cementitious Materials shall be portland cement or portland-pozzolan cement and shall conform to appropriate specifications listed below.

2.1.1.1 Portland Cement. ASTM C 150, Type I or II except that the maximum amount of C3A in Type I cement shall be 15 percent including false set requirements.

2.1.1.2 Portland-Pozzolan Cement. ASTM C 595, Type IP.

2.1.2 Aggregates. Aggregates shall comply with ASTM C 33.

2.1.3 Admixtures. Admixtures to be used, when required or approved, shall comply with the appropriate specification listed below:

2.1.3.1 Air-Entraining Admixture. ASTM C 260.

2.1.3.2 Water-Reducing Admixtures. ASTM C 494, Type A, B or D.

2.1.4 Curing Materials.

2.1.4.1 Burlap. AASHTO M 182.

2.1.4.2 Impervious Sheets. ASTM C 171, type optional, except that polyethylene film, if used, shall be white opaque.

2.1.4.3 Membrane-Forming Compounds. ASTM C 309, Type 1-D, Class A or Class B. Curing compound shall be compatible with subsequent surface finishes indicated on the drawings or specified herein.

2.1.5 Water. Water for mixing shall be fresh, potable, and free from injurious amounts of oil, acid, salt, alkali, organic matter or other deleterious substances.

2.1.6 Concrete Quality. Specified compressive strength f'_c shall be 4000 pounds per square inch at 28 days. Concrete shall have a minimum cementitious content of 500 pounds per cubic yard and a maximum water cement ratio by weight of 0.45. The maximum nominal size coarse aggregate shall be 1-inch. The air content shall be 6.0 ± 1.5 percent. The slump shall not vary more than $\pm 1\frac{1}{2}$ inch from $3\frac{1}{2}$ inches.

2.1.7 Form Material. Material with sufficient ability to withstand pressure of placed concrete without bow or deflection.

2.1.8 Reinforcing Materials.

2.1.8.1 Smooth Dowels. Smooth dowels shall conform to ASTM A 615, Grade 60.

2.1.8.2 Reinforcing Steel. Reinforcing steel shall be deformed bars conforming to ASTM A 615, grade 60 and sizes as indicated on the drawings.

2.1.8.3 Welded Wire Fabric. Welded wire fabric shall conform to ASTM A 185.

2.1.8.4 Wire Ties. Wire ties shall be 16-gauge or heavier black annealed steel wire.

2.1.9 Premolded Joint Filler. Premolded joint filler shall conform to ASTM D 1751.

2.1.10 Joint Sealant.

2.1.10.1 Expansion Joint Filler Strips. Premolded to conform to ASTM D 1752, Type I sponge rubber.

2.1.10.2 Field Molded Sealants and Primer. Field molded sealants and primer shall conform to ASTM C 920, Type M, Grade P, Class 25, use T for horizontal joints, and Type M, Grade NS, Class 25, use NT for vertical joints. Bond breaker material shall be polyethylene tape, coated paper, metal foil or similar type materials. The back-up material shall be compressible, nonshrink, nonreactive with sealant, and nonabsorptive material type such as extruded butyl or polychloroprene foam rubber.

2.1.11 Non-shrink Grout. Non-shrink grout conforming to ASTM C1107, requiring only mixing with water at the worksite, shall be used where shown on the drawings. The mixing, placing, and curing shall be as recommended by the manufacturer.

PART 3 - EXECUTION

3.1 PRODUCTION OF CONCRETE. Ready-mixed concrete shall conform to ASTM C 94, except as otherwise specified.

3.2 PREPARATION FOR PLACING. Formwork shall be complete and mortar tight. Ramps and walkways, as necessary, shall be constructed to allow safe and expeditious access for concrete and workmen. Snow, ice, standing or flowing water, loose particles, debris and foreign matter shall have been removed. Subgrade under the concrete structures shall be satisfactorily compacted. Reinforcement shall be secured in place; joints, anchors and other embedded items shall have been positioned. All equipment needed to place and consolidate the concrete shall be at the placement site and in good operating condition. Spare vibrators shall be available. The entire preparation shall be accepted by the Government prior to placing.

3.2.1 Embedded Items. Before placing concrete, care shall be taken to determine that all embedded items are firmly and securely fastened in place as indicated on the drawings. Embedded items shall be free of oil and other foreign matter such as loose coatings of rust, paint, and scale. The embedding of wood in concrete will be permitted only when specifically authorized or directed.

3.3 PLACING.

3.3.1 General. Concrete placement shall not be permitted when weather conditions prevent proper placement and consolidation. Concrete shall be worked into the corners and angles of the forms and around all reinforcement and embedded items without permitting the material to segregate. Concrete shall be placed within 45 minutes after water has been added, unless otherwise approved by the Contracting Officer. It shall be placed on a clean, damp surface free from water, ice, frost, mud, debris or objectionable coatings. Surfaces against which concrete is to be placed shall have a temperature of not less than 50 degrees F. Concrete shall be consolidated with the aid of mechanical vibrating equipment supplemented by hand spading and tamping. Vibrating equipment shall be of the internal type and shall at all times be adequate to properly consolidate all concrete. A stand-by power unit will be required on site if vibrators are operated by an external power source. All concrete placing equipment and methods shall be subject to approval.

3.3.2 Placing Temperature. Concrete, when deposited in the forms during cold weather, shall have a temperature of not less than 50 degrees F nor more than 70 degrees F. Heating of the mixing water or aggregates will not be permitted until the temperature of the concrete has decreased to 55 degrees F. The materials shall be free from ice, snow, and frozen lumps before entering the mixer. All methods and equipment shall be subject to approval. All concrete placed during warm weather shall be delivered to the forms at the coolest temperature, which is practical to produce under current conditions but not above 90 degrees F.

3.3.3 Formwork. Construct so that concrete members and structures are of correct size, shape, alignment, elevation and position. Provide openings in formwork to accommodate work of other trades. Accurately place and securely support items built into forms. Forms for exposed surfaces shall be coated with nonstaining form oil, which shall be applied shortly before concrete is placed. Forms for unexposed surfaces may be thoroughly wetted in lieu of oiling, immediately before the placing of concrete, except that in freezing weather, oil shall be used. Forms shall not be removed without approval. All form removals shall be accomplished in such a manner as to prevent injury to the concrete. Forms shall not be removed before the expiration of the minimum of 24 hours after completion of the concrete

placement except where otherwise specifically authorized by the Contracting Officer. When conditions on the work are such as to justify the requirement, forms will be required to remain in place for longer periods.

3.3.4 Furnishing and Placing Steel Reinforcement.

3.3.4.1 General. The Contractor shall furnish, cut, bend, and place all steel reinforcement including rods and fabric, as indicated on the drawings. All reinforcement shall be, when surrounding concrete is placed, free from loose flaky rust and scale, and free from oil, grease, or other coating, which might destroy or reduce its bond with the concrete.

3.3.4.2 Cutting and Bending. Steel reinforcement shall be shop bent. All bending shall be in accordance with standard approved practice and by approved machine methods.

3.3.4.3 Concrete Cover. The cover for reinforcement shall be as indicated on the drawings.

3.3.4.4 Splicing. All splices in reinforcement shall be in accordance with the requirements of ACI 318, unless otherwise shown on the drawings.

3.3.4.5 Supports. All reinforcement including welded wire fabric shall be secured in place by the use of metal or concrete supports, spacers or ties, as approved.

3.4 JOINTS.

3.4.1 General. All joints in the concrete shall conform to the locations, designs, and details shown on the drawings, and as specified herein. The required materials shall be furnished and placed by the Contractor. Sufficient fastenings shall be used to ensure that joint assemblies and materials remain in position during the entire period of concrete placing, striking off, vibrating and finishing.

3.4.2 Expansion Joints. Provide premolded joint filler at expansion joints. The top edge of the joint material shall be protected, while the concrete is being placed, by a metal channel cap of at least 10-gage material having flanges at least 1-1/2 inches deep. The installing device may be designed with this cap self-contained. For expansion joints to receive sealant, top of joint filler shall be not less than 1/2-inch or more than 1-inch below finished surface for joint sealer.

3.4.3 Control Joints. Control joints shall be constructed by tooling the concrete while the concrete is still plastic. Joints shall be of the dimensions indicated on the drawings. Joints shall be grooved to true alignment and in sequence of concrete placement.

3.4.4 Joint Sealant. Where joint sealant is indicated on the drawings, joints shall be primed and installation of sealant shall be in accordance with the manufacturer's recommendations.

3.5 FINISHING.

3.5.1 General. No finishing nor repairs shall be accomplished when either the concrete or the ambient temperature is below 50 degrees F.

3.5.2 Finishing Unformed Surfaces. All unformed surfaces that are not to be covered by additional concrete or backfill shall be float finished to

elevations shown on the drawings. Surfaces to receive additional concrete or backfill shall be brought to the elevations shown on the drawing and left as a true and regular surface. Exterior surfaces shall be sloped for drainage unless otherwise shown on the drawings. Joints shall be carefully made with a jointing tool. Unformed surfaces shall be finished to a tolerance of 1/8 inch for a trowel finish and 1/4 inch for a float finish as determined by a 10-foot straightedge placed on surfaces shown on the plans to be level, or having a constant slope. Finishing shall not be performed while there is excess moisture or bleeding water on the surface.

3.5.2.1 Float Finish. Surfaces to be float finished shall be screeded and darried or bullfloated to eliminate the ridges and fill in the voids left by the screed. In addition, the darby or bullfloat shall fill all surface voids and only slightly embed the coarse aggregate. When the water sheen disappears and the concrete will support a man, floating should be completed. Floating should embed large aggregates just beneath the surface, remove slight imperfections, humps and voids, to produce a plane surface and compact the concrete and consolidate mortar at the surface.

3.5.2.2 Trowel Finish. A steel trowel finish shall be applied to all surface areas. Troweling shall be performed immediately following floating to provide a smooth, even, dense finish free from blemishes including trowel marks. Finished surfaces shall be protected from damage during the construction period.

3.6 CURING AND PROTECTION. Beginning immediately after placement, and continuing for at least 7 days, unless indicated otherwise, all concrete shall be cured and protected from premature drying, extremes in temperature, rapid temperature change, freezing, mechanical damage and exposure to rain or flowing water. All materials and equipment needed for adequate curing and protection shall be available and at the site of the placement prior to start of concrete placement. Preservation of moisture for concrete surfaces not in contact with forms shall be accomplished by one of the following methods:

- (1) Ponding or continuous sprinkling.
- (2) Application of absorptive mats or fabrics kept continuously wet.
- (3) Application of sand kept continuously wet.
- (4) Application of membrane forming curing compound shall be applied in accordance with manufacturer's instructions.

3.7 PROTECTION. The Contractor shall protect the concrete from damage until acceptance of work. No material shall be placed on concrete structures for a minimum of 14 days, or until the specified strength as required in paragraph 2.1.6 is met. When construction traffic is permitted, maintain concrete as clean as possible by removing surface stains and spillage of materials as they occur. Sweep concrete and wash free of stains, discoloration, dirt and other foreign material just prior to final inspection.

3.8 TESTS AND INSPECTIONS

3.8.1 General. The individuals who sample and test concrete as required in this specification shall have demonstrated a knowledge and ability to perform the necessary test procedures equivalent to the ACI minimum guidelines for certification of Concrete Field Testing Technicians, Grade I.

3.8.2 Inspection Details and Frequency of Testing.

3.8.2.1 Preparations for Placing. Foundation or construction joints, forms, and embedded items shall be inspected in sufficient time prior to each concrete placement by the Contractor to certify that it is ready to receive concrete.

3.8.2.2 Air Content. Air content shall be checked at least once during each shift that concrete is placed. Samples shall be obtained in accordance with ASTM C172 and tested in accordance with ASTM C231.

3.8.2.3 Slump. Slump shall be checked at least once during each shift that concrete is produced. Samples shall be obtained in accordance with ASTM C172 and tested in accordance with ASTM C143.

3.8.2.4 Strength. The strength of the concrete shall be checked at least once during each shift that concrete is produced. A total of three test specimens, one tested at seven days and two tested at twenty-eight days, shall be obtained in accordance with ASTM C172 and test specimens made in accordance with ASTM C31 and tested in accordance with ASTM C39. The Contractor shall make additional test specimens as needed for testing at other times as required to verify strength for protection indicated in paragraph 3.7.

3.8.2.5 Consolidation and Protection. The contractor shall ensure that the concrete is properly consolidated, finished, protected, and cured.

3.8.3 Action Required.

3.8.3.1 Placing. The placing foreman shall not permit placing to begin until he has verified that an adequate number of acceptable vibrators, which are in working order and have competent operators, are available. Placing shall not be continued if any pile is inadequately consolidated.

3.8.3.2 Air Content. Whenever a test result is outside the specification limits (between 4.5 and 7.5 percent), the concrete shall not be delivered to the forms and an adjustment shall be made to the dosage of the air-entrained mixture.

3.8.3.3 Slump. Whenever a test result is outside the specification limits (between 2 and 5 inches), the concrete shall not be delivered to the forms and an adjustment shall be made in the batch weights of water and fine aggregate. The adjustments are to be made so that the water-cement ratio does not exceed that specified in the submitted concrete mixture proportion.

3.8.3.4 Strength. The acceptance shall be in accordance with paragraph 03300-1.4.

3.8.4 Reports. The results of all tests and inspections conducted at the project site shall be reported in writing daily.

-- END OF SECTION 03300 --

03410.1

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SECTION 03410

PLANT-PRECAST AND PRECAST PRESTRESSED STRUCTURAL CONCRETE

PART 1 - GENERAL

1.1 REFERENCES. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

1.1.1 AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION
OFFICIALS (AASHTO)

AASHTO HB-16 (1996) Standard Specifications for Highway
Bridges

1.1.2 AMERICAN CONCRETE INSTITUTE (ACI)

ACI 211.1 (1991) Standard Practice for Selecting
Proportions for Normal, Heavyweight, and Mass
Concrete

ACI 214 (1977; R 1989) Evaluation of Strength Test
Results of Concrete

ACI 304R (1989) Measuring, Mixing, Transporting, and
Placing Concrete

ACI 305R (1991) Hot Weather Concreting

ACI 306.1 (1990) Cold Weather Concreting

ACI 309R (1987) Consolidation of Concrete

ACI 318 (1995) Building Code Requirements for Reinforced
Concrete

1.1.3 AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 27/A 27M (1993) Steel Castings, Carbon, for General
Application

ASTM A 36/A 36M (1994) Carbon Structural Steel

ASTM A 47 (1990) Ferritic Malleable Iron Castings

ASTM A 123 (1989; Rev. A) Zinc (Hot-Dip Galvanized)
Coatings on Iron and Steel Products

ASTM A 153/A 153M (1995) Zinc Coating (Hot-Dip) on Iron and Steel
Hardware

ASTM A 185 (1994) Steel Welded Wire Fabric, Plain, for

Concrete Reinforcement

ASTM A 307	(1994) Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength
ASTM A 325	(1994) Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
ASTM A 416/A 416M	(1996) Steel Strand, Uncoated Seven-Wire for Prestressed Concrete
ASTM A 497	(1995) Steel Welded Wire Fabric, Deformed, for Concrete Reinforcement
ASTM A 563	(1994) Carbon and Alloy Steel Nuts
ASTM A 615/A 615M	(1995b) Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
ASTM A 780	(1993; Rev. A) Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings
ASTM C 31	(1991) Making and Curing Concrete Test Specimens in the Field
ASTM C 33	(1993) Concrete Aggregates
ASTM C 94	(1995) Ready-Mixed Concrete
ASTM C 150	(1995) Portland Cement
ASTM C 172	(1990) Sampling Freshly Mixed Concrete
ASTM C 231	(1991b) Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C 260	(1995) Air-Entraining Admixtures for Concrete
ASTM C 494	(1992) Chemical Admixtures for Concrete
ASTM C 1107	(1991; Rev. A) Packaged Dry, Hydraulic-Cement Grout (Nonshrink)
ASTM F 436	(1993) Hardened Steel Washers
ASTM F 844	(1990) Washers, Steel, Plain (Flat), Unhardened for General Use

1.1.4 ILLINOIS DEPARTMENT OF TRANSPORTATION (IDOT)

IDOT-01	(2002) Standard Specification for Road and Bridge Construction
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1.1.5 PRECAST/PRESTRESSED CONCRETE INSTITUTE (PCI)

PCI MNL-116	(1985) Quality Control for Plants and Production of Precast Prestressed Concrete Products
PCI MNL-120	(1992) Design Handbook - Precast and Prestressed Concrete

1.2 PRECAST AND PRESTRESSED MEMBERS. The work includes the provision of a precast prestressed concrete deck beam, herein referred to as prestressed structures. Prestressed structures shall be the product of manufacturers specializing in the production of members and systems similar to those provided under this contract. Precast prestressed concrete deck beam materials, construction, and placement shall be in accordance with IDOT-01.

1.2.1 Design Requirements. Where design of members and connections is specified, such design shall be performed in accordance with ACI 318 and PCI MNL-120 as applicable, and as specified herein. All precast and prestressed elements shall be designed by the Contractor to safely resist construction loads such as fabrication, handling, transportation, storage and installation-induced effects. Contractor design requirements for in-service loading conditions are as follows.

1.2.2 Prestressed Deck Beam. Contractor design for in-service conditions is not required. Construction requirements for these elements to resist in-service loadings are as indicated on the drawings and specified herein. Where Contractor design for construction loads requires adjustment to member dimensions, reinforcing or other specifics indicated on the drawings, such adjustments shall be subject to the approval of the Contracting Officer.

1.3 SUBMITTALS. Government approval is required for all submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01300 SUBMITTAL PROCEDURES:

1.3.1 Data. Design Calculations; GA. Design calculations shall be submitted prior to the initiation of manufacture of members to be used under this contract. Calculations shall be prepared, signed, and sealed by a registered professional engineer experienced in the design of similar type work. Concrete Mixture Proportions; GA. Concrete mixture proportions shall be submitted for approval. Material; GA. Submit manufacturers literature for fabric bearing pads, geotextile, and asphalt roof cement, certifying that materials meet specification requirements.

1.3.2 Drawings. Prestressed Structures; GA. Submit drawings for approval prior to fabrication, indicating complete information for the fabrication, handling, and erection of the precast and prestressed structures. Drawings shall not be reproductions of contract drawings.

1.3.3 Statements. Fabrication; FIO. Submit quality control procedures established in accordance with PCI MNL-116 by the precast and prestressed structures manufacturers.

1.3.4 Reports. Concrete; FIO. The results of concrete strength testing by the Contractor shall be submitted not more than 5 days after the tests are completed.

1.3.5 Certificates. Concrete Materials; FIO. Cement, Air-Entraining Admixture, Water-Reducing Admixture, Accelerating Admixture, Aggregates and nonshrink grout shall be certified for compliance with all specifications requirements. Air Content; FIO. Each precast member delivered to the jobsite shall be accompanied by a certificate certifying that the air content in the concrete in that member is in compliance with the specifications. The certification must be based on an air content test conducted in conformance with ASTM C 231 on at least one of the batches of concrete from which the member was cast. Reinforcing Steel; GA. Certified copies of mill reports, furnished prior to installation, attesting that the reinforcing steel meets the requirements specified. For prestressing strand, provide certified test reports of ultimate strength and typical stress strain curves as furnished by the manufacturer.

1.4 QUALITY CONTROL. Product quality control shall be in accordance with PCI MNL-116 for PCI enrolled plants. Where elements are manufactured in plants not currently enrolled in the PCI "Quality Control Program," provide a product quality control system in accordance with PCI MNL-116 and perform concrete and aggregate quality control testing using an approved, independent commercial testing laboratory. Submit test results to the Contracting Officer.

1.4.1 Performance Requirements. Perform the following testing to ensure the materials and method used meet the requirements of these specifications and will produce prestressed concrete members which are suitable for their intended use.

1.4.1.1 Concrete. Concrete shall be sampled and cylinders made in accordance with ASTM C 172 and ASTM C 31.

a. Concrete Test Cylinders. A minimum of two concrete test cylinders per bed for prestressed members shall be made to verify the strength of concrete at the time of stress transfer and a minimum of two test cylinders per day or 50 cubic yards of concrete or fraction thereof, whichever results in the most cylinders, shall be made for each mix design to verify the attainment of the specified strength for precast and prestressed items.

b. Cylinder Making. Cylinders shall be made as near as possible to the location where they will be cured and shall not be disturbed in any way from 1/2 hour after casting until they are either 24 hours old or ready to be tested. Concrete in cylinders may be consolidated by rodding or by vibration as specified in ASTM C 31.

c. Cylinder Curing.

(1) Test cylinders shall be cured with similar methods as the members they represent. In lieu of actual curing with prestressed members, cylinders may be cured in curing chambers correlated in temperature and humidity with the beds. In such a case, the correlation shall be constantly verified by use of recording thermometers in the curing chambers

and comparison with the temperature records of beds and by use of the same methods of moisture retention for curing chambers and casting beds.

(2) For beds cured by steam or radiant heat, cylinders shall be placed at random points along the bed. If there is any indication of variable heat, cylinders shall be placed in the coolest area.

(3) Test cylinders to indicate compliance with specified 28-day or earlier strength shall remain in the bed with the member until the member is removed. At that time, the cylinders shall be removed from their molds and placed in storage in a moist condition at 73.4 degrees plus or minus 3 degrees F.

d. Testing of Cylinders.

(1) Testing of cylinders to determine compressive strength shall be performed in accordance with ASTM C 39. The strength of concrete at any given age shall be determined as the average of two cylinders, except a single cylinder test can be used to determine stress transfer strength or predictive strengths at less than 28 days.

(2) Testing machines shall be calibrated in accordance with ASTM C 39.

1.4.1.2 Air Content. The air content tests shall be conducted in accordance with ASTM C 231. At least one air content test shall be conducted on the concrete from which each member is cast.

1.5 DELIVERY AND STORAGE. Lift and support prestressed members at the lifting and supporting points indicated on the shop drawings. Store prestressed members off the ground. Protect from weather, marring, damage, and overload.

1.6 FACTORY INSPECTION. At the option of the Contracting Officer, prestressed structures shall be inspected by the QC Representative prior to being transported to the job site. The Contractor shall give notice 14 days prior to the time the units will be available for plant inspection. Neither the exercise nor waiver of inspection at the plant will affect the Government's right to enforce contractual provisions after units are transported or erected.

PART 2 - PRODUCTS

2.1 MATERIALS. Except where otherwise indicated on the drawings, materials shall comply with the following:

2.1.1 Cement. ASTM C 150, Type I, II, or III; except as modified herein. For exposed concrete, use one manufacturer for each type of cement.

2.1.2 Water. Water shall be fresh, clean, and potable.

2.1.3 Aggregates. ASTM C 33, size as determined by structure manufacturer, except as modified herein. Obtain aggregates for exposed concrete surfaces from one source. Aggregates shall not contain any substance

which may be deleteriously reactive with the alkalies in the cement. Coarse aggregate shall be limestone, class designation 4S or better.

2.1.4 Grout. Nonshrink nonmetallic grout conforming to ASTM C 1107.

2.1.5 Admixtures. Except where otherwise indicated, admixtures containing chlorides or nitrates shall not be used.

2.1.5.1 Air-Entraining. ASTM C 260.

2.1.5.2 Accelerating. ASTM C 494, Type C.

2.1.5.3 Water Reducing. ASTM C 494, Type A.

2.1.6 Reinforcement.

2.1.6.1 Reinforcing Bars. ASTM A 615, Grade 60.

2.1.6.2 Welded Wire Fabric. ASTM A 185 or ASTM A 497.

2.1.6.3 Prestressing Strand. ASTM A 416 Grade 270.

2.1.7 Metal Accessories. Galvanize metal accessories in accordance with ASTM A 123 or ASTM A 153.

2.1.7.1 Structural Steel. ASTM A 36.

2.1.7.2 Bolts. ASTM A 307; ASTM A 325.

2.1.7.3 Nuts. ASTM A 563.

2.1.7.4 Washers. ASTM F 844 washers for ASTM A 307 bolts, and ASTM F 436 washers for ASTM A 325 bolts.

2.1.8 Fabric Bearing Pads. Elastomeric pads conforming to AASHTO HB-16.

2.2 CONCRETE MIXTURE PROPORTIONS.

2.2.1 Concrete. Concrete shall be composed of cement, water, fine and coarse aggregate, and admixtures. The admixtures shall be an air-entraining agent, and may include water-reducing and accelerating admixtures when formulation and use are approved.

2.2.2 Proportions. The concrete mixture proportions shall meet the following requirements:

a. Maximum Water-cement ratio (w/c) = 0.5;

b. Specified Strength = minimum 4,000 psi at 28 days for precast items, 5,000 psi at 28 days for prestressed elements;

c. Air Content = 5 to 7 percent as determined in accordance with ASTM C 231.

Proportions shall be selected so that the maximum permitted w/c ratio is not exceeded and so as to produce an average strength exceeding the design strength f'_c by the amount indicated below. Where the production facility has a standard deviation record determined in accordance with ACI 214, based on 30 consecutive strength tests of similar mixture proportions to that proposed, obtained within 1 year of the time when concrete placing is expected, it shall be used in selecting average strength. The average strength used as the basis for selecting proportions shall exceed the specified strength f'_c by at least:

- (1) 400 psi if standard deviation is less than 300 psi;
- (2) 550 psi if standard deviation is 300 to 400 psi;
- (3) 700 psi if standard deviation is 400 to 500 psi;
- (4) 900 psi if standard deviation is 500 to 600 psi.

If the standard deviation exceeds 600 psi or if a standard deviation record is not available, proportions shall be selected to produce an average strength at least 1,200 psi greater than the specified strength. Mixtures shall be proportioned in accordance with ACI 211.1. The trial mixtures shall be formulated using the same materials as those to be used in the units supplied under this specification, and the selected proportions shall be submitted for approval with the results of cylinder strengths at 28 days.

2.3 FABRICATION. PCI MNL-116 unless specified otherwise. For prestressed members, transfer of prestress shall not be made until the concrete has achieved a compressive strength of 4,000 psi. Provide exposed connecting bars, or other approved connection methods, between precast and cast-in-place construction. Remove any excess mortar that adheres to the exposed connections.

2.3.1 Forms. Brace forms to prevent deformation. Forms shall produce a smooth, dense surface. Chamfer exposed edges of walls and beams 3/4 inch, unless otherwise indicated. Provide threaded or snap-off type form ties.

2.3.2 Reinforcement Placement. ACI 318 for placement and splicing. Welding of reinforcement for placing or splicing will not be permitted. Reinforcement may be preassembled before placement in forms.

2.3.3 Concrete.

2.3.3.1 Concrete Mixing. ASTM C 94. Mixing operations shall produce batch-to-batch uniformity of strength, consistency, and appearance.

2.3.3.2 Concrete Placing. ACI 304R, ACI 305R for hot weather concreting, ACI 306.1 for cold weather concreting, and ACI 309R, unless otherwise specified.

2.3.3.3 Concrete Curing. Commence curing immediately following the initial set and completion of surface finishing. Provide curing procedures to keep the temperature of the concrete between 50 and 190 degrees F. When accelerated curing is used, apply heat at controlled rate and uniformly along the casting beds. Monitor temperatures at various points in a product line in different casts.

2.3.4 Repairs. All honeycombed areas, chipped corners, air pockets over 1/4 inch in diameter, and other minor defects shall be repaired. Form offsets of fins over 1/8 inch shall be ground smooth. All unsound concrete shall be removed from defective areas prior to repairing. All surfaces permanently exposed to view shall be repaired by a blend of portland cement and white cement properly proportioned so that the final color when cured will be the same as adjacent concrete. Procedures for repairs located in a bearing area shall be approved by the Contracting Officer prior to making repairs. Members containing hairline cracks which are visible and are less than 0.02 inches in width, may be accepted, provided that cracks larger than 0.005 inches in width for surfaces exposed to the weather are repaired. Repair procedures for members which contain cracks greater than 0.02 inches in width shall be approved by the Contracting Officer, prior to being repaired. Any member that is structurally impaired or contains honeycombed section deep enough to expose reinforcing shall be rejected.

2.3.5 Finishing.

2.3.5.1 Unformed Surfaces. Unless indicated otherwise provide a floated finish. Provide broom finish for top of prestressed deck beam units with direction of brooming transverse to member length.

2.3.5.2 Formed Surfaces. PCI MNL-116 (Appendix A - Commentary), Chapter 3, for grades of surface finishes.

a. Unexposed Surfaces: Provide a commercial grade surface finish.

b. Exposed Surfaces: Provide a finish Grade B surface finish. The combined area of acceptable defective areas shall not exceed 0.2 percent of the exposed to view surface area, and the patches shall be indistinguishable from the surrounding surfaces when dry.

PART 3 - EXECUTION

3.1 SURFACE REPAIR. Prior to erection, and again after installation, precast members shall be checked for damage, such as cracking, spalling, and honeycombing. As directed by the Contracting Officer, precast members that do not meet the surface finish requirements specified in paragraph 2.3.4 shall be repaired, or removed and replaced with new members.

3.2 ERECTION. Prestressed structures shall not be erected until after the concrete has attained the specified compressive strength, unless otherwise approved by the Contracting Officer. Erect in accordance with the approved shop drawings, and PCI MNL-116 and PCI MNL-120 (Chapter 8), for tolerances. Follow the manufacturer's recommendations for maximum construction loads. Place members level, plumb, square, and true within tolerances. Align member ends.

3.3 BEARING SURFACES. Bearing surfaces shall be flat, free of irregularities, and properly sized. Correct bearing surface irregularities with nonshrink grout. Provide bearing pads where indicated or required.

3.4 ANCHORAGE. Provide anchorage for fastening other work in place. Conceal fasteners where practicable. Make threaded connections up tight and nick threads to prevent loosening.

3.5 OPENINGS. Holes or cuts requiring reinforcing to be cut, which are not indicated on the approved shop drawing, shall only be made with the approval of the Contracting Officer and the precast manufacturer. Drill holes less than 12 inches in diameter with a diamond tipped core drill.

3.6 GALVANIZING REPAIR. Repair damage to galvanized coatings using ASTM A 780 zinc rich paint for galvanized surfaces damaged by handling, transporting, cutting, bolting, or acid washing. Do not heat surfaces to which repair paint has been applied.

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SECTION 05100 - METALWORK FABRICATION
AND MISCELLANEOUS PROVISIONS

PART 1 GENERAL

1.1 SCOPE. This section specifies general workmanship requirements applicable to the fabrication, assembly and testing of various items of metalwork and machine work to ensure conformance with the specifications. These requirements are in addition to those contained in the specification sections covering the specific items of work or indicated on the drawings.

1.2 QUALITY CONTROL.

1.2.1 General. The Contractor shall establish and maintain quality control for all operations to assure compliance with contract requirements and maintain records of its quality control for all construction operations including but not limited to the following:

- (1) Fabrication
- (2) Welding
- (3) Installation.

1.2.2 Reporting. A copy of these records and tests, as well as corrective action taken, shall be furnished to the Government daily.

1.3 REFERENCES. The following issues of the publications listed below but referred to thereafter by basic designation only form a part of this specification to the extent indicated by the references thereto.

1.3.1 American Society for Testing and Materials (ASTM).

- | | |
|---------------------|--|
| A 123-97
(Rev A) | Zinc (Hot-Galvanized) Coatings on Iron and Steel Products |
| A 380-96 | Cleaning, Descaling, and Passivation of Stainless Steel Parts, Equipment and Systems |
| A 780-93a | Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings |

1.3.2 American Welding Society, Inc. (AWS).

- | | |
|----------|---|
| D 1.1-94 | Structural Welding Code - Steel |
| D1.6-99 | Structural Welding Code - Stainless Steel |

1.3.3 ASME International (ASME).

- | | |
|----------------|--|
| BPVC SEC IX-95 | Qualification Standard for Welding and Brazing Procedures, Welders, Brazers, and Welding and Brazing Operators |
|----------------|--|

1.4 SUBMITTALS. Government approval is required for all submittals with

a "GA" designation; submittals having an "FIO" designation are for information only. The Contractor shall submit the following to the Contracting Officer in accordance with SECTION 01300 - SUBMITTAL PROCEDURES.

1.4.1 Shop Drawings. Detail Drawings; GA. Detail drawings for metalwork, machine work and completed fabricated items shall be submitted and approved prior to fabrication. Drawings shall include catalog cuts, templates, fabrication and assembly details and type, grade and class of materials as appropriate. Elements of fabricated items inadvertently omitted on contract drawings shall be detailed by the fabricator and indicated on the shop drawings. Shop drawings shall indicate surface preparation and shop painting requirements.

1.4.2 Schedules.

1.4.2.1 Welding of Structural Steel; GA. Schedules of welding procedures for steel structures shall be submitted and approved prior to commencing fabrication.

1.4.2.2 Welding of Stainless Steel; GA. Schedules of welding procedures for stainless steel structures shall be submitted and approved prior to commencing fabrication.

1.4.2.3 Structural Steel Welding Repairs; GA. Welding repair plans for steel shall be submitted and approved prior to making repairs.

1.4.2.4 Stainless Steel Welding Repairs; GA. Welding repair plans for steel shall be submitted and approved prior to making repairs.

1.4.2.5 Materials Orders; FIO. Copies of purchase orders, mill orders, shop orders and work orders for materials shall be submitted prior to the use of the materials in the work.

1.4.2.6 Materials List; FIO. The Contractor shall furnish 2 (two) copies of all purchase and mill orders, shop orders and work orders. The Contractor shall furnish a list designating the material to be used for each item at the time of submittal of shop drawings. Where mill tests are required, purchase orders shall contain the test site address and the name of the testing agency. The Contractor shall also furnish a shipping bill or memorandum of each shipment of finished pieces or members to the project site giving the designation mark and weight of each piece, the number of pieces and the total weight. Copies of certified shipping bills shall be mailed promptly to the Contracting Officer.

1.4.2.7 Shipping Bill; FIO. Shipping bill shall be submitted with the delivery of finished pieces to the site.

1.4.3 Reports. Tests, Inspections, and Verifications; FIO. Certified test reports for materials shall be submitted with all materials delivered to the site.

1.4.4 Statements.

1.4.4.1 Qualification of Welders and Welding Operators; GA. Certifications for welders and welding operators shall be submitted prior to commencing fabrication.

1.4.4.2 Welding of Stainless Steel; GA. Certified report for aluminum welding qualification tests shall be submitted and approved prior to commencing welding.

1.4.5 Schedules.

1.4.5.1 Lists of Materials; FIO.

1.4.5.2 Schedule of Welding Procedures; GA.

1.4.6 Reports.

1.4.6.1 Materials Tests, Welding Procedures and Qualifications, and Weld Examinations and Testing; FIO. Certified test reports for material tests and analyses, examinations including visual examination and nondestructive testing of welds, welding procedures and welding operator qualifications shall be submitted in triplicate. Test reports for material tests and analyses shall be identified with specific lots and items prior to installation.

1.4.7 Records. Materials Disposition; FIO. A system of identification that shows the disposition of specific lots of approved materials and fabricated items in the work shall be established and submitted before completion of the contract.

1.5 DETAIL DRAWINGS. Detail drawings for metalwork and machine work shall include catalog cuts, templates, fabrication and assembly details and type, grade and class of material as appropriate. Elements of fabricated items inadvertently omitted on contract drawings shall be detailed by the fabricator and indicated on the detail drawings.

1.6 QUALIFICATION OF WELDERS AND WELDING OPERATORS. The Contractor shall certify the qualification of welders and welding operators and tack welders according to the codes specified below for the corresponding type of welding. The certificate shall list the qualified welders by name and shall specify the code and procedures under which qualified and the date of qualification. Prior qualification will be accepted if welders have performed satisfactory work under the code for which qualified within the preceding three months. The Contractor shall require welders to repeat the qualifying tests when their work indicates a reasonable doubt as to proficiency. Those passing the requalification tests will be recertified. Those not passing will be disqualified until passing. All expenses in connection with qualification and requalification shall be borne by the Contractor.

1.6.1 Structural Steel. The Contractor shall certify that the qualification of welders and welding operators and tack welders who will perform structural steel welding have been qualified for the particular type of work to be done in accordance with the requirements of AWS D1.1, Section 4 or ASME BPV IX, Section IX, prior to commencing fabrication.

1.6.2 Stainless Steel. The Contractor shall certify that the qualification of welders and welding operators and tack welders who will perform structural steel welding have been qualified for the particular type of work to be done in accordance with the requirements of AWS D1.6, Section 4.

PART 2 PRODUCTS

2.1 MATERIALS.

2.1.1 Materials Orders. The Contractor shall furnish 2 copies of purchase orders, mill orders, shop orders and work orders for all materials orders and items used in the work. Where mill tests are required purchase orders shall contain the test site address and the name of the testing agency.

2.1.2 Materials List. The Contractor shall furnish a materials list of the materials to be used in the fabrication of each item.

2.1.3 Shipping Bill. The Contractor shall furnish a shipping bill or memorandum of each shipment of finished pieces or members to the project site giving the designation mark and weight of each item, the number of items, the total weight, and the car initial and number if shipped by rail in carload lots. Duplicate copies of shipping bills shall be mailed promptly to the Contracting Officer.

2.2 FABRICATION.

2.2.1 Structural Fabrication. Material must be straight before being laid off or worked. If straightening is necessary it shall be done by methods that will not impair the metal. Sharp kinks or bends shall be cause for rejection of the material. Material with welds will not be accepted except where welding is definitely specified, indicated on the drawings or otherwise approved. Bends shall be made by approved dies, press brakes or bending rolls. Where heating is required, precautions shall be taken to avoid overheating the metal and it shall be allowed to cool in a manner that will not impair the original properties of the metal. Proposed flame cutting of material other than structural steel shall be subject to approval and shall be indicated on shop drawings. Shearing shall be accurate and all portions of the work shall be neatly finished. Corners shall be square and true unless otherwise shown on the drawings. Re-entrant cuts shall be filleted to a minimum radius of 3/4-inch unless otherwise approved. Finished members shall be free of twists, bends and open joints. Bolts, nuts and screws shall be tight.

2.2.1.1 Dimensional Tolerances for Structural Work. Dimensions shall be measured by an approved calibrated steel tape of approximately the same temperature as the material being measured at the time of measurement. The overall dimensions of an assembled structural unit shall be within 1/32-inch in the overall length of component members with both ends milled. Component members without milled ends shall not deviate from the dimensions shown on the drawings by more than 1/16-inch for members 30 feet or less in length and by not more than 1/8-inch for members over 30 feet in length.

2.2.1.2 Structural Steel Fabrication. Structural steel may be cut by mechanically guided or hand guided torches provided an accurate profile with a surface that is smooth and free from cracks and notches is obtained. Surfaces and edges to be welded shall be prepared in accordance with AWS D1.1, Subsection 3.2. Where structural steel is not to be welded, chipping or grinding will not be required except as necessary to remove slag and sharp edges of mechanically guided or hand guided cuts not exposed to view. Hand guided cuts which are to be exposed or visible shall be chipped, ground or machined to sound metal.

2.2.2 Welding.

2.2.2.1 Welding of Structural Steel.

a. Welding Procedures for Structural Steel - Welding procedures for structural steel shall be prequalified as described in AWS D1.1, Subsection 5.1 or shall be qualified by tests as prescribed in AWS D1.1, Section 5. Properly documented evidence of compliance with all requirements of these specifications for previous qualification tests shall establish a welding procedure as prequalified. For welding procedures qualified by tests, the test welding and specimen testing must be witnessed and the test report document signed by the Contracting Officer. Approval of any welding procedure will not relieve the Contractor or the responsibility for producing a finished structure meeting all requirements of these specifications. The Contractor will be directed or authorized to make any changes in previously approved welding procedures that are deemed necessary or desirable by the Contracting Officer. The Contractor shall submit a complete schedule of welding procedures for each steel structure to be welded. The schedule shall conform to the requirements specified in AWS D1.1, Sections 2, 3, 4, 7 and 9 and applicable provisions of Section 10. The schedule shall provide detailed procedure specifications and tables or diagrams showing the procedures to be used for each required joint. Welding procedures must include filler metal, preheat, interpass temperature and stress-relief heat treatment requirements.

Each welding procedure shall be clearly identified as being prequalified or required to be qualified by tests. Welding procedures must show types and locations of welds designated or in the specifications to receive nondestructive examination.

b. Welding Process - Welding of structural steel shall be by an electric arc welding process using a method which excludes the atmosphere from the molten metal and shall conform to the applicable provisions of AWS D1.1, Sections 1 thru 7, 9, 10 and 11. Welding shall be such as to minimize residual stresses, distortion and shrinkage.

c. Welding Technique

(1) Filler Metal - The electrode, electrode-flux combination and grade of weld metal shall conform to the appropriate AWS specification for the base metal and welding process being used or shall be as shown on the drawings where a specific choice of AWS specification allowables is required. The AWS designation of the electrodes to be used shall be included in the schedule of welding procedures. Only low hydrogen electrodes shall be used for manual shielded metal-arc welding regardless of the thickness of the steel. A controlled temperature storage oven shall be used at the job site as prescribed by AWS D1.1, Subsection 4.5 to maintain low moisture of low hydrogen electrodes.

(2) Preheat and Interpass Temperature - Preheating shall be performed in accordance with AWS D1.1, Subsection 4.2 and 4.3 or as otherwise specified except that the temperature of the base metal shall be at least 70 degrees F. The weldments to be preheated shall be slowly and uniformly heated by approved means to the prescribed temperature, held at that temperature until the welding is completed and then permitted to cool slowly in still air.

(3) Stress-Relief Heat Treatment - Where stress relief heat treatment is specified or shown on the drawings it shall be in accordance with the requirements of AWS D1.1, Subsection 4.4 unless otherwise authorized or directed by the Contracting Officer

d. Workmanship - Workmanship for welding shall be in accordance with AWS D1.1, Section 3 and other applicable requirements of these specifications.

(1) Preparation of Base Metal - Prior to welding, the Contractor shall inspect surfaces to be welded to assure compliance with AWS D1.1, Subsection 3.2.

(2) Temporary Welds - Temporary welds required for fabrication and erection shall be made under the controlled conditions prescribed herein for permanent work. Temporary welds shall be made using low-hydrogen welding electrodes and by welders qualified for permanent work as specified in these specifications. Preheating for temporary welds shall be as required by AWS D1.1 for permanent welds except that the minimum temperature shall be 120 degrees F in any case. In making temporary welds arcs shall not be struck in other than weld locations. Each temporary weld shall be removed and ground flush with adjacent surfaces after serving its purpose.

(3) Tack Welds - Tack welds that are to be incorporated into the permanent work shall be subject to the same quality requirements as the permanent welds and shall be cleaned and thoroughly fused with permanent welds. Preheating shall be performed as specified above for temporary welds. Multiple-pass tack welds shall have cascaded ends. Defective tack welds shall be removed before permanent welding.

2.2.2.2 Welding of Stainless Steel.

a. Welding Procedures for Structural Steel - Welding procedures for stainless steel shall be prequalified as described in AWS D1.6, Section 3 or shall be qualified by tests as prescribed in AWS D1.6, Section 4. Properly documented evidence of compliance with all requirements of these specifications for previous qualification tests shall establish a welding procedure as prequalified. For welding procedures qualified by tests, the test welding and specimen testing must be witnessed and the test report document signed by the Contracting Officer. Approval of any welding procedure will not relieve the Contractor or the responsibility for producing a finished structure meeting all requirements of these specifications. The Contractor will be directed or authorized to make any changes in previously approved welding procedures that are deemed necessary or desirable by the Contracting Officer. The Contractor shall submit a complete schedule of welding procedures for each steel structure to be welded. The schedule shall conform to the requirements specified in the provisions of AWS D1.6, Sections 2 and 5.

The schedule shall provide detailed procedure specifications and tables or diagrams showing the procedures to be used for each required joint. Welding procedures must include filler metal, preheat, interpass temperature and stress-relief heat treatment requirements. Each welding procedure shall be clearly identified as being prequalified or required to be qualified by tests.

Welding procedures must show types and locations of welds designated or in the specifications to receive nondestructive examination.

b. Welding Process - Welding of structural steel shall be by an electric arc welding process using a method which excludes the atmosphere from the molten metal and shall conform to the applicable provisions of AWS D1.6, Sections 1 thru 6. Welding shall be such as to minimize residual stresses, distortion and shrinkage.

c. Welding Technique

(1) Filler Metal - The electrode, electrode-flux combination and grade of weld metal shall conform to the appropriate AWS specification for the base metal and welding process being used or shall be as shown on the drawings where a specific choice of AWS specification allowables is required. The AWS designation of the electrodes to be used shall be included in the schedule of welding procedures. Extra low carbon electrodes shall be used. A controlled temperature storage oven shall be used at the job site as prescribed by AWS D1.6, Subsection 3.10.2 to store electrodes for shielded metal arc welding.

(2) Preheat and Interpass Temperature - Preheating shall be performed in accordance with AWS D1.6, Subsections 5.1.2 and 5.8.4 or as otherwise specified except that the temperature of the base metal shall be at least 70 degrees F. The weldments to be preheated shall be slowly and uniformly heated by approved means to the prescribed temperature, held at that temperature until the welding is completed and then permitted to cool slowly in still air.

(3) Postweld Heat Treatment (PWHT) - Where PWHT is specified or shown on the drawings it shall be in accordance with the requirements of AWS D1.6, Subsection 5.16 unless otherwise authorized or directed by the Contracting Officer

d. Workmanship - Workmanship for welding shall be in accordance with AWS D1.6, Section 5 and other applicable requirements of these specifications.

(1) Preparation of Base Metal - Prior to welding, the Contractor shall inspect surfaces to be welded to assure compliance with AWS D1.6, Subsection 5.2.

(2) Temporary Welds - Temporary welds and their removal shall conform to the requirements of AWS D1.6, Subsection 5.7. Temporary welds required for fabrication and erection shall be made under the controlled conditions prescribed herein for permanent work. Temporary welds shall be made using extra low carbon welding electrodes and by welders qualified for permanent work as specified in these specifications. Preheating for temporary welds shall be as required by AWS D1.6 for permanent welds except that the minimum temperature shall be 120 degrees F in any case. In making temporary welds arcs shall not be struck in other than weld locations. Each temporary weld shall be removed and ground flush with adjacent surfaces after serving its purpose.

(3) Tack Welds - Tack welds and their removal shall conform to the requirements of AWS D1.6, Subsection 5.7. Tack welds that are to be incorporated into the permanent work shall be subject to the same quality requirements as the permanent welds and shall be cleaned and thoroughly fused with permanent welds. Preheating shall be performed as specified above for temporary welds. Multiple-pass tack welds shall have cascaded ends. Defective tack welds shall be removed before permanent welding.

2.2.2.3 Welding of Steel Studs. The procedures for welding steel studs to structural steel, including mechanical, workmanship, technique, stud application qualification, production quality control and fabrication and verification inspection procedures shall conform to the requirements of AWS D1.1, Section 7 except as otherwise specified.

a. Stud Materials - The type, size and length of studs shall be as indicated on the drawings. The Contractor shall furnish for approval the

manufacturer's certified test reports and certification that the studs conform to the requirements of AWS D1.1, Subsections 7.2 and 7.3.

b. Application Qualification for Steel Studs - As a condition of approval of the stud application process, the Contractor shall furnish certified test reports and certification that the studs conform to the requirements of AWS D1.1, Subsections 7.2 and 7.3, certified results of the stud manufacturer's stud application qualification test, and certified results of the stud application qualification test as required by AWS D1.1, Subsection 7.6, except as otherwise specified.

c. Production Quality Control - Quality control for production welding shall conform to the requirements of AWS D1.1, Subsection 7.7 except as otherwise specified. Studs on which pre-production testing is to be performed shall be welded in the same general position as required on production studs (flat, vertical, overhead or sloping). Test and production stud welding will be subjected to visual examination or inspection by the Contracting Officer. If the reduction of the length of studs becomes less than normal as they are welded, welding shall be stopped immediately and not resumed until the cause has been corrected.

2.2.3 Miscellaneous Provisions.

2.2.3.1 Galvanizing. Zinc coatings shall be applied to structural steel elements indicated on the drawings in a manner and of a thickness and quality conforming to ASTM A 123. Where zinc coatings are destroyed by cutting, welding or other causes the affected areas shall be regalvanized. Coatings 2 ounces or heavier shall be regalvanized with a suitable low-melting zinc base alloy similar to the recommendations of the American Hot-Dip Galvanizers Association to the thickness and quality specified for the original zinc coating. Coatings less than 2 ounces shall be regalvanized by a repair compound conforming to ASTM A 780 to the thickness and quality specified for the original zinc coating.

2.2.3.2 Holes for Wire Rope. Holes drilled in posts for wire rope guardrails shall be accurately located, smooth, perpendicular to the member and cylindrical.

2.2.3.3 Cleaning of Stainless Steel. Oil, paint and other foreign substances shall be removed from stainless steel surfaces after fabrication. Cleaning shall be done by vapor degreasing or by the use of cleaners of the alkaline, emulsion or solvent type. After the surfaces have been cleaned they shall be given a final rinsing with clean water followed by a 24 hour period during which the surfaces are intermittently wet with clean water and then allowed to dry for the purpose of inspecting the clean surfaces. The surfaces shall be visually inspected for evidence of paint, oil, grease, welding slag, heat treatment scale, iron rust or other forms of contamination. If evidence of foreign substance exists the surface shall be cleaned in accordance with the applicable provisions of ASTM A 380. The proposed method of treatment shall be furnished for approval. After treatment the surfaces shall be visually reinspected. Brushes used to remove foreign substances shall have only stainless steel or nonmetallic bristles. Any contamination occurring subsequent to the initial cleaning shall be removed by one or more of the methods indicated above.

2.2.4 Shop Assembly. Each structural unit furnished shall be assembled in the shop to determine the correctness of the fabrication and matching of

the component parts unless otherwise specified. Tolerances shall not exceed those shown on the drawings. Each unit assembled shall be closely checked to insure that all necessary clearances have been provided. Assembly in the shop shall be in the same position as final installation in the field unless otherwise specified. Errors or defects disclosed shall be immediately remedied by the Contractor without cost to the Government. Before disassembly for shipment, each piece of a structural unit shall be match-marked to facilitate erection in the field. The location of match-marks shall be indicated by circling with a ring of white paint after the shop coat of paint has been applied or as otherwise directed.

2.3 TESTS, INSPECTIONS, AND VERIFICATIONS. The Contractor shall have required material tests and analyses performed and certified by an approved laboratory to demonstrate that materials are in conformity with the specifications. These tests and analyses shall be performed and certified at the Contractor's expense. Tests shall conform to the requirements of the particular sections of these specifications for the respective items of work unless otherwise specified or authorized. The Contractor shall furnish specimens and samples for additional independent tests and analyses upon request by the Contracting Officer. Specimens and samples shall be properly labeled and prepared for shipment.

2.3.1 Nondestructive Testing. When doubt exists as to the soundness of any material part, such part may be subjected to any form of nondestructive testing determined by the Contracting Officer. This may include ultrasonic, magnaflux, dye penetrant, x-ray, gamma ray or any other test that will thoroughly investigate the part in question. The cost of such investigation will be borne by the Government. Any defects will be cause for rejection and rejected parts shall be replaced and retested at the Contractor's expense.

2.3.2 Tests of Structural Units. The details for tests of structural units shall conform to the requirements of the particular sections of these specifications covering these items. Each complete structural unit shall be assembled and tested in the shop in the presence of the Contracting Officer unless otherwise directed. Waiving of tests will not relieve the Contractor of responsibility for any fault in operation, workmanship or material that occurs before the completion of the contract or guarantee.

2.3.3 Inspection of Structural Steel Welding. The Contractor shall maintain an approved inspection system and perform required inspections in accordance with the Contract Clause entitled "Inspection of Construction" of this contract. Welding shall be subject to inspection by the Contracting Officer to determine conformance with the requirements of AWS D1.1, the approved welding procedures and provisions stated in other sections of these specifications. The Contracting Officer will require nondestructive examination of designated welds and may require supplemental examination of any joint or coupon cut from any location in any joint.

2.3.3.1 Visual Inspection. All completed welds shall be cleaned and carefully examined for insufficient throat or leg sizes, cracks, undercutting, overlap, excessive convexity or reinforcement and other surface defects to ensure compliance with the requirements of AWS D1.1, Section 3 and Section 9, Part D.

2.3.3.2 Test Coupons. The Government reserves the right to require the Contractor to remove coupons from completed work when doubt as to soundness cannot be resolved by nondestructive examination. Should tests of any two

coupons cut from the work of any welder show strengths less than that specified for the base metal, it will be considered evidence of negligence or incompetence and such welder shall be removed from the work. When coupons are removed from any part of a structure, the members cut shall be repaired in a neat manner with joints of the proper type to develop the full strength of the members. Repaired joints shall be peened as approved or directed to relieve residual stress. The expense for removing and testing coupons, repairing cut members and the nondestructive examination of repairs shall be borne by the Government or the Contractor in accordance with the Contract Clause entitled "Inspection of Construction" of this contract.

2.3.3.3 Supplemental Examination. When the soundness of any weld is suspected of being deficient due to faulty welding or stresses that might occur during shipment or erection, the Government reserves the right to perform supplemental nondestructive examinations before final acceptance. The cost of such inspection will be borne by the Government.

2.3.4 Inspection of Stainless Steel Welding. The Contractor shall maintain an approved inspection system and perform required inspections in accordance with the Contract Clause entitled "Inspection of Construction" of this contract. Welding shall be subject to inspection by the Contracting Officer to determine conformance with the requirements of AWS D1.6, the approved welding procedures and provisions stated in other sections of these specifications. The Contracting Officer will require nondestructive examination of designated welds and may require supplemental examination of any joint or coupon cut from any location in any joint.

2.3.4.1 Visual Inspection. All completed welds shall be cleaned and carefully examined for insufficient throat or leg sizes, cracks, undercutting, overlap, excessive convexity or reinforcement and other surface defects to ensure compliance with the requirements of AWS D1.6, Section 5 and AWS D1.1, Section 9, Part D.

2.3.4.2 Test Coupons. The Government reserves the right to require the Contractor to remove coupons from completed work when doubt as to soundness cannot be resolved by nondestructive examination. Should tests of any two coupons cut from the work of any welder show strengths less than that specified for the base metal, it will be considered evidence of negligence or incompetence and such welder shall be removed from the work. When coupons are removed from any part of a structure, the members cut shall be repaired in a neat manner with joints of the proper type to develop the full strength of the members. Repaired joints shall be peened as approved or directed to relieve residual stress. The expense for removing and testing coupons, repairing cut members and the nondestructive examination of repairs shall be borne by the Government or the Contractor in accordance with the Contract Clause entitled "Inspection of Construction" of this contract.

2.3.4.3 Supplemental Examination. When the soundness of any weld is suspected of being deficient due to faulty welding or stresses that might occur during shipment or erection, the Government reserves the right to perform supplemental nondestructive examinations before final acceptance. The cost of such inspection will be borne by the Government.

2.3.5 Welding Repairs.

2.3.5.1 Structural Steel Welding Repairs. Defective welds in the structural steel welding repairs shall be repaired in accordance with AWS

D1.1, Subsection 3.7. A welding repair plan shall be submitted for approval before repairs are made when deemed necessary by the Contracting Officer. Defective weld metal shall be removed to sound metal by use of air carbon-arc or oxygen gouging. The surfaces shall be thoroughly cleaned before welding. Welds that have been repaired shall be retested by the same methods used in the original inspection. Except for the repair of members cut to remove test coupons and found to have acceptable welds, costs of repairs and retesting shall be borne by the Contractor.

2.3.5.2 Stainless Steel Welding Repairs. Defective welds in the structural steel welding repairs shall be repaired in accordance with AWS D1.6, Subsections 5.12 and 5.13. A welding repair plan shall be submitted for approval before repairs are made when deemed necessary by the Contracting Officer. Defective weld metal shall be removed to sound metal by use of air carbon-arc gouging. The surfaces shall be thoroughly cleaned before welding. Welds that have been repaired shall be retested by the same methods used in the original inspection. Except for the repair of members cut to remove test coupons and found to have acceptable welds, costs of repairs and retesting shall be borne by the Contractor.

2.3.6 Inspection and Testing of Steel Stud Welding. Fabrication and verification inspection and testing shall conform to the requirements of AWS D1.1, Subsection 7.8 except as otherwise specified. One stud in every 10 and studs that do not show a full 360 degree weld flash, have been repaired by welding or whose reduction in length due to welding is less than normal shall be bent or torque tested as required by AWS D1.1, Subsection 7.8. If any of these studs fail two additional studs shall be bent or torque tested. If either of the two additional studs fail all of the studs represented by the tests shall be rejected. Studs that crack under testing in either the weld, base metal or shank shall be rejected and replaced by the Contractor at no additional cost.

PART 3 EXECUTION

3.1 INSTALLATION. All parts to be installed shall be thoroughly cleaned. Packing compounds, rust, dirt, grit and other foreign matter shall be removed. Enclosed chambers or passages shall be examined to make sure that they are free from damaging materials. Where units or items are shipped as assemblies they will be inspected prior to installation. Disassembly and cleaning will not be required except where necessary to place the assembly in a clean condition. Pipe wrenches, cold chisels or other tools likely to cause damage to the surfaces of rods, nuts or other parts shall not be used for assembling and tightening parts.

3.1.1 Alignment and Setting. Each structural unit shall be accurately aligned by the use of steel shims or other approved methods. The alignment of all parts with respect to each other shall be true within the respective tolerances required.

3.1.2 Blocking and Wedges. All blocking and wedges used during installation for the support of parts to be grouted shall be removed before final grouting unless otherwise directed by the Contracting Officer. Blocking and wedges left in the grout space with the approval of the Contracting Officer shall be of steel or iron.

3.2 PAINTING. Surfaces of metals which shall be exposed after

installation, except galvanized steel, shall be painted as specified in
SECTION 09965 - PAINTING.
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SECTION 05500 - MISCELLANEOUS METAL MATERIALS, STANDARD ARTICLES,
AND SHOP FABRICATED ITEMS

PART 1 GENERAL

1.1 SCOPE. The work covered by this section consists of providing all equipment, materials, and labor for fabricating, furnishing, and installing miscellaneous metal materials, standard articles, and shop fabricated items.

1.2 RELATED WORK SPECIFIED ELSEWHERE. Additional fabrication requirements and workmanship provisions for items specified in this section shall conform with the requirements of SECTION 05100 - METALWORK FABRICATION AND MISCELLANEOUS PROVISIONS.

1.3 QUALITY CONTROL.

1.3.1 General. The Contractor shall establish and maintain quality control for all operations to assure compliance with contract requirements and maintain records of its quality control for all construction operations, including but not limited to the following:

(1) Materials

(2) Fabricated Items.

1.3.2 Reporting. A copy of these records and tests, as well as corrective action taken, shall be furnished to the Government daily.

1.4 REFERENCES. The following issues of the publications listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by the references thereto or as required:

1.4.1 American Society of Mechanical Engineers (ASME).

B18.2.1-96 Square and Hex Bolts and Screws (Inch Series)

B18.2.2-87 Square and Hex Nuts (Inch Series)
(R 1993)

B18.22.1-65 Plain Washers
(R 1998)

B18.6.3-72 Machine Screws and Machine Screw Nuts
(R 1997)

1.4.2 American Society for Testing and Materials (ASTM).

A 36/A 36M-96 Carbon Structural Steel

A 108-95 Steel Bars, Carbon, Cold-Finished,
Standard Quality

A 193/A 193M-97	Alloy-Steel and Stainless Bolting
A 276-97	Materials for High-Temperature Service
	Stainless Steel Bars and Shapes
A 307-94	Carbon Steel Bolts and Studs, 60,000 PSI
	Tensile Strength

1.4.3 Engineering Manuals (EM).

EM 385-1-1	(1996) U.S. Army Corps of Engineers Safety and Health Requirements Manual
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1.5 QUALITY ASSURANCE. Requirements for tests, workmanship, and other measures for quality assurance shall be as specified herein and in SECTION 05100 - METALWORK FABRICATION AND MISCELLANEOUS PROVISIONS.

1.6 SUBMITTALS. Government approval is required for submittals with a "GA" designation; submittals not having a "GA" designation are for information only "FIO". The following shall be submitted in accordance with SECTION 01300 - SUBMITTAL PROCEDURES.

1.6.1 Shop Drawings. Shop Fabricated Metal Items; GA. Detail drawings shall be submitted for approval as specified herein and in SECTION 05100 - METALWORK FABRICATION AND MISCELLANEOUS PROVISIONS.

1.6.2 Product Data. Miscellaneous Metals and Standard Metal Articles; GA. Shop Fabricated Metal Items; GA. Lists of materials shall be submitted for approval as specified herein and in SECTION 05100 - METALWORK FABRICATION AND MISCELLANEOUS PROVISIONS. Records which identify the disposition of approved material and fabricated items in the work must be submitted for approval as specified herein and in SECTION 05100 - METALWORK FABRICATION AND MISCELLANEOUS PROVISIONS.

1.6.3 Test Reports. Miscellaneous Metals and Standard Metal Articles; GA. Shop Fabricated Metal Items; GA. Certified test reports for materials tests and analyses shall be submitted for approval as specified herein and in SECTION 05100 - METALWORK FABRICATION AND MISCELLANEOUS PROVISIONS.

1.7 FABRICATION AND WORKMANSHIP REQUIREMENTS. Fabrication requirements and workmanship provisions for items specified in this section shall conform with the requirements of SECTION 05100 - METALWORK FABRICATION AND MISCELLANEOUS PROVISIONS.

PART 2 PRODUCTS

2.1 MISCELLANEOUS METALS AND STANDARD ARTICLES. Miscellaneous metal materials and standard articles shall conform to the respective specifications and other designated requirements. Sizes shall be as specified or as shown on the drawings. Where material requirements are not specified, materials furnished shall be suitable for the intended use and shall be subject to the approval of the Contracting Officer.

2.1.1 Structural Steel.

2.1.1.1 Shapes, Plates, Dowels and Bars. ASTM A 36.

2.1.2 Stainless Steel.

2.1.2.1 Stainless Steel Plate. ASTM A 276, UNS S30403, Type 304L.

2.1.3 Bolts, Nuts, and Washers. ASTM A 307, Grade A.

2.1.3.1 Bolts. ASME B18.2.1.

2.1.3.2 Nuts. ASME B18.2.2

2.1.3.3 Washers.

2.1.3.3.1 Plain Washers. ASME B18.22.1, Type B.

2.1.4 Screws and Nuts. Screws and nuts shall be of the material, grade, type, style, and finish indicated or best suited for use intended.

2.1.4.1 Machine Screws and Nuts. ASME B18.6.3.

2.1.5 Headed Stud Connectors. ASTM A 108, Grade 1015, sizes as shown on the drawings.

2.1.6 Wire Rope and Accessories. Wire rope for guardrails shall be galvanized, of the lengths and diameter shown on the drawings, suitable for withstanding the guardrail loads required in EM 385-1-1. Clips for terminating wire rope at posts shall be galvanized, shall be of the proper size for the wire rope specified and shall be capable of holding the wire rope under tension to avoid sag and withstand required loads.

2.1.7 Chains and Attachments. Safety chains incorporated in the guardrail shall be of galvanized steel, straight link type, 3/16 inch diameter, with at least twelve links per foot, and with snap hooks on each end. Snap hooks shall be boat type. Galvanized 3/8 inch bolts with 3/4 inch diameter eyes shall be used for attachment of the chains to the posts. Two chains, each four inches longer than the distance to be spanned between posts, shall be provided for each area guarded by chains. Safety chains shall be installed where indicated on the contract drawings, with connections to posts at elevations as close as practicable to the elevations of the adjacent wire rope guardrails.

2.1.8 Grating. Metal bar grating for the intake structure and the riser structures shall be of welded steel construction. Bearing bars shall be 1-1/2 inches by 3/16 inches and shall be on 1-3/16 inch centers. All grating shall be galvanized.

2.1.9 Adhesive Anchor Inserts and Bolts.

2.1.9.1 Adhesive Anchor Inserts. Adhesive anchor inserts shall be similar and equal to the "HVA" internally-threaded inserts as manufactured by Hilti, Inc., Tulsa, OK, 74121. Each internally-threaded insert shall have a 45 degree (from central axis) chisel pointed end. The insert shall be stainless steel material which meets a minimum ultimate tensile strength of 74 ksi. The adhesive shall consist of a dual chamber foil capsule. The resin material shall be vinyl urethane methacrylate. Procedures and accessories (bits, etc.) for installation shall meet manufacturer's recommendations.

2.1.9.2 Adhesive Anchor Insert Bolts. ASTM A 193, Class 1C, Grade B8R

or B8RA.

2.1.10 Stem Guides and Anchors. Stem guides for the gate valves shall be heavy cast iron with bronze bushings, and shall be mounted to heavy cast iron mounting brackets. Guides shall be adjustable in two directions and shall be so constructed that when properly spaced, they will hold the stem in alignment and still allow enough play to permit easy operation. Stem guides shall be spaced per the recommendations of the manufacturer, but in no case shall spacing exceed an l/r ratio of 200. Brackets shall be attached to concrete members by anchor bolts of sufficient strength to prevent twisting or sagging under load. The stem guide attached to the concrete cross-beam of the inlet structure shall be similar and equal to the Waterman K-2 stem guide, as manufactured by Waterman Industries, Inc., Exeter, California 93221. The lower stem guide attached to the side wall of the inlet structure shall be similar and equal to the Waterman K-2 Long stem guide, by the same manufacturer. Anchors for attaching the stem guides shall be similar and equal to the HVA Type 304 stainless adhesive anchors as manufactured by Hilti, Inc., Tulsa, OK, 74121. Anchor diameter shall be as recommended by the stem guide manufacturer, and anchor embedment shall be adequate to resist loads as required by the valve manufacturer. Adhesive shall be as described in paragraph 2.1.9.1.

2.2 SHOP FABRICATED METAL ITEMS. Shop fabricated metal items shall conform to the requirements and details as specified or shown on the drawings and to the workmanship provisions and other applicable fabrication requirements as specified in SECTION 05100 - METALWORK FABRICATION AND MISCELLANEOUS PROVISIONS.

PART 3 EXECUTION (NOT APPLICABLE)

3.1 WIRE ROPE GUARDRAIL. Wire rope guardrail shall be installed with adequate tension to resist sag as required per EM 385-1-1.

-END OF SECTION 05500-

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SECTION 09965 - PAINTING

PART 1 GENERAL

1.1 REFERENCES. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

1.1.1 American National Standards Institute (ANSI).

- | | |
|-------------|---|
| ANSI Z87.1 | (1989; Errata; Z87.1a) Occupational and Educational Eye and Face Protection |
| ANSI Z358.1 | (1990) Emergency Eyewash and shower Equipment |

1.1.2 American Society for Testing and Materials (ASTM).

- | | |
|-------------|---|
| ASTM D 153 | (1984; R 1996 E1) Specific Gravity of Pigments |
| ASTM D 281 | (1995) Oil Absorption of Pigments by Spatula Rub-Out |
| ASTM D 520 | (2000) Zinc Dust Pigment |
| ASTM D 561 | (1982; R 1996 E1) Carbon Black Pigment for Paint |
| ASTM D 740 | (1994; R 1997) Methyl Ethyl Ketone |
| ASTM D 841 | (1997) Nitration Grade Toluene |
| ASTM D 1045 | (1995) Sampling and Testing Plasticizers Used in Plastics |
| ASTM D 1152 | (1997) Methanol (Methyl Alcohol) |
| ASTM D 1153 | (1994; R 1997) Methyl Isobutyl Ketone |
| ASTM D 1186 | (1993) Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to a Ferrous Base |
| ASTM D 1200 | (1994; R 1999) Viscosity by Ford Viscosity Cup |
| ASTM D 1210 | (1996) Fineness of Dispersion of Pigment-Vehicle Systems by Hegman-Type Gage |
| ASTM D 2917 | (1991; R 1998) Methyl Isoamyl Ketone |
| ASTM D 3721 | (1983; R 1999) Synthetic Red Iron Oxide Pigment |
| ASTM D 4417 | (1993; R 1999) Field Measurement of |

Surface Profile of Blast Cleaned Steel

ASTM E 1347 (1997) Color and Color-Difference
Measurement by Tristimulus (Filter)
Colorimetry

1.1.3 Code of Federal Regulations (CFR).

29 CFR 1910 Occupational Safety and Health Standards
29 CFR 1910.94 Ventilation
29 CFR 1910.134 Respiratory Protection
29 CFR 1910.146 Permit-required Confined Spaces
29 CFR 1910.1020 Access to Employee Exposure and Medical
Records
29 CFR 1910, Subpart I Personal Protective Equipment
29 CFR 1926 Safety and Health Regulations for
Construction

1.1.4 U.S. Army Corps of Engineers (EM).

EM 385-1-1 (1996) U.S. Army Corps of Engineers Safety
and Health Requirements Manual

1.1.5 Federal Standards (FED-STD).

FED-STD-595 (Rev B, Notice 1) Colors Used in
Government Procurement

1.1.6 Master Painters Institute (MPI).

MPI 9 (Mar 2000) Exterior Alkyd Enamel

1.1.7 SSPC: The Society for Protective Coatings (SSPC).

SSPC Paint 25 (1991) Red Iron Oxide, Zinc Oxide, Raw
Linseed Oil and Alkyd Primer (Without Lead
and Chromate Pigments)
SSPC SP 1 (1982) Solvent Cleaning
SSPC SP 5/NACE 1 (2000) White Metal Blast Cleaning
SSPC SP 6/NACE 3 (1994) Commercial Blast Cleaning
SSPC SP 7/NACE 4 (1994) Brush-Off Blast Cleaning

1.2 SUBMITTALS. Government approval is required for all submittals with
a "G" designation; submittals having an "FIO" designation are for information
only. The Contractor shall submit the following to the Contracting Officer in
accordance with SECTION 01300 - SUBMITTAL PROCEDURES.

1.2.1 Product Data.

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(1-03)

1.2.1.1 Accident Protection Plan; GA. The Contractor shall submit an Accident Prevention Plan in accordance with the requirements of Section 01 of EM 385-1-1. The plan shall include, but is not limited to, each of the topic areas listed in Appendix A therein and the requirements of Paragraph 09965-1.4, SAFETY AND HEALTH PROVISIONS; each topic shall be developed in a concise manner to include management and operational aspects.

1.2.1.2 Respiratory Protection Program; GA. The Contractor shall submit a comprehensive written respiratory protection program in accordance with 29 CFR 1910.134 and Section 0.5E of EM 385-1-1.

1.2.1.3 Medical Surveillance Plan; GA. The Contractor shall submit a Medical Surveillance Plan as required in Paragraph 09965-1.5, MEDICAL STATUS and provide a statement from the examining physician indicating the name of each employee evaluated and any limitations which will preclude the employee from performing the work required. The statement shall include the date of the medical evaluation, the physician's name, signature, and telephone number.

1.2.1.4 Product Data Sheets; GA. The Contractor shall submit paint manufacturer's product data sheets indicating compliance with specified requirements prior to on-site work. Data sheets shall indicate written instructions for use of the product including application equipment and surface preparation recommendations, physical properties, coverages, drying times, and environmental limitations for applications, including temperature and humidity requirements.

1.2.1.5 Material Safety Data Sheets; GA. The Contractor shall submit paint manufacturer's material safety data sheets prior to on-site work.

1.2.2 Samples.

1.2.2.1 Specification and Proprietary Paints; GA. The Contractor shall submit samples of all special paint formula, Master Painters Institute, and SSPC paints. For products that are specified to be applied in accordance with the manufacturer's recommendations, the Contractor shall submit the paint producer's product data sheet or other written instructions for those products. When the required quantity of any type is 50 gallons or less, the Contractor shall submit in lieu of the liquid paint sample:

a. A certified test report showing the results of required tests made on the material and a statement that it meets all of the specification requirements.

b. A certified test report showing the results of required tests made on a previous patch of paint produced by the same firm using the same ingredients and formulation except for minor differences necessitated by a color change and a statement that the previous batch met all of the specification requirements. A report of tests on the proposed batch showing the following properties applicable to the material specifications shall be furnished: color, gloss, drying time, opacity, viscosity, weight per gallon, and fineness of grind.

1.2.2.2 Thinners; GA. Samples shall be submitted of the thinners which are those solvents used to reduce the viscosity of the paint.

1.2.3 Test Reports. Inspection and Operation Records; GA. The Contractor shall submit records of inspections and operations performed in accordance with Paragraph 09965-3.4, INSPECTION. Submittals shall be made on
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a daily basis.

1.2.4 Certificates. Qualified Coating Thickness Gages; GA. Documentation of manufacturer's certification shall be submitted for all coating thickness gages.

1.3 COATING THICKNESS GAGE QUALIFICATION. Documentation of certification shall be submitted for all coating thickness gages. Magnetic flux thickness gages as described in ASTM D 1186 shall be used to make all coating thickness measurements on ferrous metal substrates. Gages shall have an accuracy of +/- 3 percent or better. Gages to be used on the job shall be certified by the manufacturer as meeting these requirements.

1.4 SAMPLING AND TESTING. The Contractor shall allow at least 30 days for sampling and testing. Sampling may be at the jobsite or source of supply. The Contractor shall notify the Contracting Officer when the paint and thinner are available for sampling. Sampling of each batch shall be witnessed by the Contracting Officer unless otherwise specified or directed. A 1-quart sample of paint and thinner shall be submitted for each batch proposed for use. The sample shall be labeled to indicate formula or specification number and nomenclature, batch number, batch quantity, color, date made, and applicable project contract number. Testing will be performed by the Government. Costs for retesting rejected material will be deducted from payments to the Contractor at the rate of 200 dollars for each paint sample retested and 200 dollars for each thinner retested.

1.5 SAFETY AND HEALTH PROVISIONS. Work shall be performed in accordance with the requirements of 29 CFR 1910, 29 CFR 1926, EM 385-1-1, and other references as listed herein. Matters of interpretation of the standards shall be submitted to the Contracting Officer for resolution before starting work. Where the regulations conflict, the most stringent requirements shall apply. Paragraph 09965-1.5, SAFETY AND HEALTH PROVISIONS, supplements the requirements of EM 385-1-1, paragraph (1). In any conflict between Section 01 of EM 385-1-1 and this paragraph, the provisions herein shall govern.

1.5.1 Abrasive Blasting. The Contractor shall comply with the requirements in Section 06.H of EM 385-1-1.

1.5.1.1 Hoses And Nozzles. In addition to the requirements in Section 20 of EM 385-1-1, hoses and hose connections of a type to prevent shock from static electricity shall be used. Hose lengths shall be joined together by approved couplings of a material and type designed to prevent erosion and weakening of the couplings. The couplings and nozzle attachments shall fit on the outside of the hose and shall be designed to prevent accidental disengagement.

1.5.1.2 Workers Other Than Blasters. Workers other than blasting operators working in close proximity to abrasive blasting operations shall be protected by utilizing MSHA/NIOSH-approved half-face or full-face air purifying respirators equipped with high-efficiency particulate air (HEPA) filters, eye protection meeting or exceeding ANSI Z87.1 and hearing protectors (ear plugs and/or ear muffs) providing at least 20 dBA reduction in noise level or as needed to provide adequate protection.

1.5.2 Cleaning with Compressed Air. Cleaning with compressed air shall be in accordance with Section 20.B.5 of EM 385-1-1 and personnel shall be protected as specified in 29 CFR 1910.134.

1.5.3 Cleaning with Solvents.

1.5.3.1 Ventilation. Ventilation shall be provided where required by 29 CFR 1910.146 or where the concentration of solvent vapors exceeds 10 percent of the Lower Explosive Limit (LEL). Ventilation shall be in accordance with 29 CFR 1910.94, paragraph (C)(5).

1.5.3.2 Personal Protective Equipment. Personal protective equipment shall be provided where required by 29 CFR 1910.146 and in accordance with 29 CFR 1910, Subpart I.

1.5.4 Mixing Epoxy Resin Formulations.

1.5.4.1 Exhaust Ventilation. Local exhaust ventilation shall be provided in the area where the curing agent and resin are mixed. This ventilation system shall be capable of providing at least 100 linear fpm of capture velocity measured at the point where the curing agent and resin contact during mixing.

1.5.4.2 Personal Protective Equipment. Exposure of skin and eyes to epoxy resin components shall be avoided by wearing appropriate chemically resistant gloves, apron, safety goggles, and face shields meeting or exceeding the requirements of ANSI Z87.1

1.5.4.3 Medical Precautions. Individuals who have a history of sensitivity to epoxy resin systems shall be medically evaluated before any exposure can occur. Individuals who are medically evaluated as exhibiting a sensitivity to epoxy resins shall not conduct work tasks or otherwise be exposed to such chemicals. Individuals who develop a sensitivity shall be immediately removed from further exposure and medically evaluated.

1.5.4.4 Emergency Equipment. A combination unit, comprised of an eyewash and deluge shower, within close proximity to the epoxy mixing operation shall be provided in accordance with ANSI Z358.1, paragraph (9).

1.5.5 Health Protection.

1.5.5.1 Air Sampling. The Contractor shall perform air sampling and testing as needed to assure that workers are not exposed to contaminants above the permissible exposure limit. In addition, the Contractor shall provide the Contracting Officer with a copy of the test results from the laboratory within five working days of their sampling dates and shall provide results from direct-reading instrumentation on the same day the samples are collected.

1.5.5.2 Respirators. During all spray painting operations, spray painters shall use approved SCBA or SAR (air line) respirators, unless valid air sampling has demonstrated contaminant levels to be consistently within concentrations that are compatible with air-purifying respirator Assigned Protection Factor (APF). Persons with facial hair that interferes with the sealing surface of the facepiece to face seal or interferes with respirator valve function shall not be allowed to perform work requiring respiratory protection. Air-purifying chemical cartridge/canister half- or full-facepiece respirators that have a particulate prefilter and are suitable for the specific type(s) of gas/vapor and particulate contaminant(s) may be used for nonconfined space painting, mixing, and cleaning (using solvents). These respirators may be used provided the measured or anticipated concentration of the contaminant(s) in the breathing zone of the exposed worker does not exceed the APF for the respirator and the gas/vapor has good warning properties or the respirator assembly is equipped with a NIOSH-approved end of service life indicator for the gas(es)/vapor anticipated or encountered.

1.5.5.3 Protective Clothing and Equipment. All workers shall wear safety shoes or boots, appropriate gloves to protect against the chemical to be encountered, and breathable, protective, full-body covering during spray-painting applications.

1.6 MEDICAL STATUS. Prior to the start of work and annually thereafter, all Contractor employees working with or around paint systems, thinners, blast media, those required to wear respiratory protective equipment, and those who will be exposed to high noise levels shall be medically evaluated for the particular type of exposure they may encounter. Medical records shall be maintained as required by 29 CFR 1910.1020. The evaluation shall include:

a. Audiometric testing and evaluation of employees who will work in a noise environment with a time weighted average greater than or equal to 90 dBA.

b. Vision screening (employees who use full-facepiece respirators shall not wear contact lenses).

c. Medical evaluation shall include, but shall not be limited to, the following:

(1) Medical history including, but not limited to, alcohol use, with emphasis on liver, kidney, and pulmonary systems, and sensitivity to chemicals to be used on the job.

(2) General physical examination with emphasis on liver, kidney, and pulmonary system.

(3) Determination of the employee's physical and psychological ability to wear respiratory protective equipment and to perform job-related tasks.

(4) Determination of baseline values of biological indices for later comparison to changes associated with exposure to paint systems and thinners or blast media, which include: liver function tests to include SGOT, SGPT, GGPT, alkaline phosphates, bilirubin, complete urinalysis, EKG (employees over age 40), blood urea nitrogen (bun), serum creatinine, pulmonary function test, FVC, and FEV, chest x-ray (if medically indicated), blood lead and ZPP (for individuals where it is known there will be an exposure to materials containing lead), other criteria that may be deemed necessary by the Contractor's physician, and Physician's statements for individual employees that medical status would permit specific task performance.

1.7 CHANGE IN MEDICAL STATUS. Any employee whose medical status has changed negatively due to work related chemical and/or physical agent exposure while working with or around paint systems and thinners, blast media, or other chemicals shall be evaluated by a physician, and the Contractor shall obtain a physicians statement as described in Paragraph 09965-1.6, MEDICAL STATUS prior to allowing the employee to return to those work tasks. The Contractor shall notify the Contracting Officer in writing of any negative changes in employee medical status and the results of the physicians reevaluation statement.

1.8 PAINT PACKAGING, DELIVERY, AND STORAGE. Paints shall be processed and packaged to ensure that within a period of one year from date of

manufacture, they will not gel, liver, or thicken deleteriously, or form gas in the closed container. Paints, unless otherwise specified or permitted, shall be packaged in standard containers not larger than 5 gallons, with removable friction or lug-type covers. Each container of paint or separately packaged component thereof shall be labeled to indicate the purchaser's order number, date of manufacture, manufacturer's batch number, quantity, color, component identification and designated name, and formula or specification number of the paint together with special labeling instructions, when specified. Paint shall be delivered to the job in unbroken containers. Paints that can be harmed by exposure to cold weather shall be stored in ventilated, heated shelters. All paints shall be stored under cover from the elements and in locations free from sparks and flames.

PART 2 PRODUCTS

2.1 PAINTS OTHER THAN SPECIAL FORMULATION. Paints shall be manufacturer's proprietary formulations that comply with the requirements indicated below. All paints shall meet current VOC regulations. Paint shall be delivered to the jobsite in unbroken standard containers. Each container of paint shall be labeled to indicate the paint type, designates name and component identification, where applicable. All paints and thinners shall be stored under cover from the elements and in locations free from sparks and flames.

2.1.1 Epoxy Paint System. Epoxy paint shall be EPO-MASTIC DTO as manufactured by Steelcote Manufacturing Co., St. Louis, MO, or approved equal. Equivalency will be based on the epoxy paint being a two component, amido-amine cured hybrid epoxy mastic which is a surface tolerant industrial maintenance coating, a one coat primer/finish coating but suitable for topcoating when dry with other color finishes, and a high build formulation which is suitable for application over marginally prepared rusted steel and old existing coatings. Paint shall be suitable for application over surfaces prepared per paragraph 09965-3.1.3.2. Paint shall provide superior coverage and protection of edges and corners as a consequence of formulation for application over substrates contaminated with petroleum oil, grease and vegetable oil. Paint shall have a leafing aluminum component. Paint color shall be a light metallic appearance. Paint shall be semi-gloss.

2.2 SPECIAL PAINT FORMULATION. Special paints shall have the composition as indicated in the formulas listed herein. Where so specified, certain components of a paint formulation shall be packaged in separate containers for mixing on the job. If not specified or otherwise prescribed, the color shall be that naturally obtained from the required pigmentation.

2.3 PAINT FORMULATIONS.

2.3.1 Formula V-766e, Vinyl-Type White (or Gray) Impacted Immersion Coating.

Ingredients	Percent by Weight
Vinyl Resin, Type 3	5.6
Vinyl Resin, Type 4	11.6
Titanium Dioxide and (for Gray)	
Carbon Black	13.0
Diisodecyl Phthalate	2.9
Methyl Isobutyl Ketone	32.0
Toluene	34.7

Ortho-Phosphoric Acid

0.2
100.0

a. The dispersion of pigment shall be accomplished by means of pebble mills or other approved methods to produce a fineness of grind (ASTM D 1210) of not less than 7 on the Hegman scale. Grinding in steel-lined or steel-ball mills will not be permitted. No grinding aids, antisetling agents, or any other materials except those shown in the formula will be permitted. The paint shall show the proper proportions of specified materials when analyzed by chromatographic and/or spectrophotometric methods. The ortho-phosphoric acid shall be measured accurately and diluted with at least four parts of ketone to one part of acid and it shall be slowly incorporated into the finished paint with constant and thorough agitation.

b. The viscosity of the paint shall be between 60 and 90 seconds using ASTM D 1200 and a No. 4 Ford cup.

c. The white and gray paints shall be furnished in the volume ratio designated by the purchaser. The gray paint shall contain no pigments other than those specified. Enough carbon black shall be included to produce a dry paint film having a reflectance of 20-24 (ASTM E 1347). The resulting gray color shall approximate color 26231 of FED-STD-595.

2.3.2 Formula VZ-108d, Vinyl-Type Zinc-Rich Impacted Immersion Coating.

Ingredients	Percent by Weight	Pounds	Gallons
COMPONENT A			
Vinyl Resin, Type 3	16.6	109.2	9.65
Methyl Isobutyl Ketone	80.6	528.9	79.30
Suspending Agent E	0.7	4.6	0.28
Suspending Agent F	0.4	2.7	0.19
Methanol	0.5	3.3	0.50
Synthetic Iron Oxide (Red)	<u>1.2</u>	<u>7.9</u>	<u>0.19</u>
	100.0	656.6	90.11
COMPONENT B			
Silane B	100.0	4.1	0.47
COMPONENT C			
Zinc Dust	100.0	550.0	9.42
			<u>100.00</u>
			(mixed paint)

a. The iron oxide and suspending agents shall be dispersed into the vehicle (Component A) to a fineness of grind of not less than 4 on the Hegman scale (ASTM D 1210). Grinding in steel-lined containers or using steel-grinding media shall not be permitted. The sole purpose of the iron oxide pigment is to produce a contrasting color. A red iron oxide-type 3 vinyl resin vehicle paste may be used in place of dry iron oxide provided compensating adjustment are made in the additions of Type 3 resin and methyl isobutyl ketone. The finished product with zinc dust added shall produce a paint which has a red tone upon drying and a reflectance of not more than 16 (ASTM E 1347).

b. VZ-108d paint shall be supplied as a kit. Each kit shall consist of
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4.5 gallons (33.1 pounds) of Component A in a 5-gallon lug closure type pail, 27.5 pounds of zinc dust (Component C) packaged in a 1-gallon plastic pail, and 3 fluid ounces of silane (Component B) packaged in a glass bottle of suitable size having a polyethylene lined cap. The bottle of silane shall be placed on the zinc dust in the gallon pail. In addition to standard labeling requirements, each container of each component shall be properly identified as to component type and each container label of Component A shall carry the following: "MIXING AND APPLICATION INSTRUCTIONS: WARNING - THIS PAINT WILL NOT ADHERE TO STEEL SURFACES UNLESS COMPONENT B IS ADDED". Remove the 3 ounces of bottled Component B (silane) from the Component C (zinc dust) container and add to the base paint Component A) with thorough stirring. Then sift the zinc dust into the base paint while it is being vigorously agitated with a power-driven stirrer and continue the stirring until the zinc dust has been dispersed. The mixed paint shall at some point be strained through a 30-60 mesh screen to prevent zinc dust slugs from reaching the spray gun nozzle. The paint shall be stirred continuously during application at a rate that will prevent settling. If spraying is interrupted for longer than 15 minutes, the entire length of the hose shall be whipped vigorously to redisperse the zinc. If the spraying is to be interrupted for more than 1 hour, the hose shall be emptied by blowing the paint back into the paint pot. Thinning will not normally be required when ambient temperatures are below about 80 degrees F, but when the ambient and steel temperatures are higher, methyl isoamyl ketone (MIAK) or methyl isobutyl ketone (MIBK) should be used. If paint is kept covered at all times, its pot life will be about 8 days.

2.4 INGREDIENTS FOR SPECIAL PAINT FORMULAS. The following ingredient materials and thinners apply only to those special paints whose formulas are shown above in detail.

2.4.1 Pigments and Suspending Agents.

2.4.1.1 Carbon Black. Carbon black shall conform to ASTM D 561, Type I or II.

2.4.1.2 Zinc Dust. Zinc dust pigment shall conform to ASTM D 520, Type II.

2.4.1.3 Iron Oxide. Iron oxide, (Dry) synthetic (red), shall conform to ASTM D 3721. In addition, the pigment shall have a maximum oil absorption of 24 and a specific gravity of 4.90 to 5.20 when tested in accordance with ASTM D 281 and ASTM D 153, Method A, respectively. When the pigment is dispersed into specified vinyl paint formulation, the paint shall have color approximating FED-STD-595 color 10076 (dark red paint) and shall show no evidence of incompatibility or reaction between pigment and other components after 6 months storage.

2.4.1.4 Titanium Dioxide. Titanium dioxide in vinyl paint Formula V-766e shall be one of the following: Kronos 2160 or 2101, Kronos, Inc.; Ti-Pure 960, E. I. DuPont DeNemours and Co., Inc.

2.4.1.5 Suspending Agent E. Suspending Agent E shall be a light cream colored finely divided powder having a specific gravity of 2 to 2.3. It shall be an organic derivative of magnesium aluminum silicate mineral capable of minimizing the tendency of zinc dust to settle hard without increasing the viscosity of the paint appreciably. MPA-14, produced by RHEOX, Inc., has these properties.

2.4.1.6 Suspending Agent F. Suspending Agent F shall be a light cream colored finely divided powder having a specific gravity of approximately 1.8.

It shall be an organic derivative of a special montmorillonite (trialkylaryl ammonium hectorite). Bentone 27, produced by RHEOX, Inc., has these properties.

2.4.2 Resins, Plasticizer, and Catalyst.

2.4.2.1 Diisodecyl Phthalate. Diisodecyl Phthalate shall have a purity of not less than 99.0 percent, shall contain not more than 0.1 percent water, and shall have an acid number (ASTM D 1045) of not more than 0.10.

2.4.2.2 Vinyl Resin, Type 3. Vinyl resin, Type 3, shall be a vinyl chloride-acetate copolymer of medium average molecular weight produced by a solution polymerization process and shall contain 85 to 88 percent vinyl chloride and 12 to 15 percent vinyl acetate by weight. The resin shall have film-forming properties and shall, in specified formulations, produce results equal to "Vinylite" resin VYHH, as manufactured by the Union Carbide Corporation.

2.4.2.3 Vinyl Resin, Type 4. Vinyl resin, Type 4, shall be a copolymer of the vinyl chloride-acetate type produced by a solution polymerization process, shall contain (by weight) 1 percent inter-polymerized dibasic acid, 84 to 87 percent vinyl chloride, and 12 to 15 percent vinyl acetate. The resin shall have film-forming properties and shall, in the specified formulations, produce results equal to "Vinylite" resin VMCH, as manufactured by the Union Carbide Corporation.

2.4.2.4 Ortho-phosphoric Acid. Ortho-phosphoric acid shall be a chemically pure 85 percent grade.

2.4.3 Solvent and Thinners.

2.4.3.1 Methanol. Methanol (methyl alcohol) shall conform to ASTM D 1152.

2.4.3.2 Methyl Ethyl Ketone. Methyleneethyl Ketone (MEK) shall conform to ASTM D 740.

2.4.3.3 Methyl Isobutyl Ketone. Methyl isobutyl ketone (MIBK) shall conform to ASTM D 1153.

2.4.3.4 Methyl Isoamyl Ketone. Methyl isoamyl ketone (MIAK) shall conform to ASTM D 2917.

2.4.3.5 Toluene. Toluene shall conform to ASTM D 841.

2.4.4 Silane B. Silane B for Formula VZ-108d shall be N-beta-(aminoethyl)-gamma-aminopropyltrimethoxy silane. Silane A-1120, produced by the C. K. Witco Corporation, and Silane Z-6020, produced by Dow Corning Corporation, are products of this type.

2.5 TESTING.

2.5.1 Chromatographic Analysis. Solvents in vinyl and epoxy paints and thinners shall be subject to analysis by programmed temperature gas chromatographic methods and/or spectrophotometric methods, employing the same techniques that give reproducible results on prepared control samples known to meet the specifications. If the solvent being analyzed is of the type consisting primarily of a single chemical compound or a mixture of 2 or more such solvents, interpretation of the test results shall take cognizance of the

degree of purity of the individual solvents as commercially produced for the paint industry.

2.5.2 Vinyl Paints. Vinyl paints shall be subject to the following adhesion test. When VZ-108 is tested, the coating shall be mixed in its proper proportions and then spray applied to a dry film thickness of 1.6 - 2.5 mils above the blast profile. The VZ-108d shall be top coated with a V-766e known to pass this test. In all cases, the complete system shall have a total dry film thickness of 5 to 7 mils above the blast profile. After being air dried for 2 hours at room temperature, the panel shall be dried in a vertical position for 16 hours at 120 degrees F. After cooling for 1 hour, the panel shall be immersed in tap water at 85-90 degrees F for 48-72 hours. Immediately upon removal, the panel shall be dried with soft cloth and examined for adhesion as follows: With a pocket knife or other suitable instrument, two parallel cuts at least 1-inch long shall be made 1/4 to 3/8 inch apart through the paint film to the steel surface. A third cut shall be made perpendicular to and passing through the end of the first two. With the tip of the knife blade, the film shall be loosened from the panel from the third cut between the parallel cuts for a distance of 1/8 to 1/4 inch. With the panel being held horizontally, the free end of the paint film shall be grasped between the thumb and forefinger and pulled vertically in an attempt to remove the film as a strip from between the first two cuts. The strip of paint film shall be removed at a rate of approximately 1/10-inch per second, and shall be maintained in a vertical position during the process of removal. The adhesion is acceptable if the strip of paint breaks when pulled or if the strip elongates a minimum of 10 percent during its removal. Paints not intended to be self-priming shall exhibit no delamination from the primer.

PART 3 EXECUTION

3.1 CLEANING AND PREPARATION OF SURFACES TO BE PAINTED.

3.1.1 General Requirements. Surfaces to be painted shall be cleaned before applying paint or surface treatments. Deposits of grease or oil shall be removed in accordance with SSPC SP 1 using solvent or cleaner per manufacturer's recommendations prior to mechanical cleaning. Clean cloths and clean fluids shall be used to avoid leaving a thin film of residue on the surfaces being cleaned. Items not to be prepared or coated shall be protected from damage by the surface preparation methods. Cleaning and painting shall be so programmed that dust or other contaminants from the cleaning process do not fall on wet, newly painted surfaces, and surfaces not intended to be painted shall be suitably protected from the effects of cleaning and painting operations. Welding of, or in the vicinity of, previously painted surfaces shall be conducted in a manner to prevent weld spatter from striking the paint and to otherwise reduce coating damage to a minimum; paint damaged by welding operations shall be restored to original condition. Surfaces to be painted that will be inaccessible after construction, erection, or installation operations are completed shall be painted before they become inaccessible.

3.1.2 Ferrous Surfaces Subject to Normal Exposure. Ferrous surfaces that are to be continuously in exterior or interior atmospheric exposure and other surfaces as directed shall be cleaned by means of dry blasting to the commercial grade. Cleaning and priming shall be done in the shop unless otherwise directed or permitted. Commercial blast cleaning shall conform to the requirements of SSPC SP 6/NACE 3. Welds and adjoining surfaces within a few inches thereof shall be cleaned of weld flux, spatter, and other harmful deposits by blasting, power impact tools, power wire brush, or such combination of these and other methods as may be necessary for complete

removal of each type of deposit. Brush scrubbing and rinsing with clean water, after mechanical cleaning is completed, will be required unless the latter is carried out with thoroughness to remove all soluble alkaline deposits. Wetting of the surfaces during water-washing operations shall be limited to the weld area required to be treated, and such areas shall be dry before painting. Welds and adjacent surfaces cleaned thoroughly by blasting alone will be considered adequately prepared provided that weld spatter not dislodged by the blast stream shall be removed with impact or grinding tools.

All surfaces shall be primed as soon as practicable after cleaning but prior to contamination or deterioration of the prepared surfaces. To the greatest degree possible, steel surfaces shall be cleaned (and primed) prior to lengthy outdoor storage to minimize breakdown of mill scale and consequent rusting.

3.1.3 Ferrous Surfaces Subject to Severe Exposure

3.1.3.1 Vinyl Coated Surfaces. Ferrous surfaces subject to extended periods of immersion or as otherwise required shall be dry blast-cleaned to SSPC SP 5/NACE 1. The blast profile unless otherwise specified shall be 1.6 to 2.5 mils as measured by ASTM D 4417, Method C. Appropriate abrasive blast media shall be used to produce the desired surface profile and to give an angular anchor tooth pattern. If recycled blast media is used, an appropriate particle size distribution shall be maintained so that the specified profile is consistently obtained. Steel shot or other abrasives that do not produce an angular profile shall not be used. Weld spatter not dislodged by blasting shall be removed with impact or grinding tools and the areas reblasted prior to painting. Surfaces shall be dry at the time of blasting. Blast cleaning to SSPC SP 5/NACE 1 shall be done in the field and, unless otherwise specifically authorized, after final erection. Within 8 hours after cleaning, prior to the deposition of any detectable moisture, contaminants, or corrosion, all ferrous surfaces blast cleaned to SSPC SP 5/NACE 1 shall be cleaned of dust and abrasive particles by brush, vacuum cleaner, and/or blown down with clean, dry, compressed air, and given the first coat of paint. Upon written request by the Contractor, the Contracting Officer may authorize mill or shop cleaning of assembled or partially assembled components specified to receive one of the vinyl-type paint systems. The surfaces, if shop blasted, shall be shop coated with the first and second coats of the specified paint system. The shop coating shall be maintained in good condition by cleaning and touching up of areas damaged during the construction period. If pinpoint or general rusting appears, surfaces shall be reblasted and repainted at no added cost to the Government. Prior to the field application of subsequent coats, soiled areas of the shop coating shall be thoroughly cleaned and all welds or other unpainted or damaged areas shall be cleaned and coated in a manner to make them equivalent to adjacent, undamaged paint surfaces.

3.1.3.2 Epoxy Coated Surfaces. Ferrous surfaces shall be cleaned as directed by means of brush-off blast cleaning in accordance with SSPC SP 7/NACE 4 as specified in the paint system schedule. Cleaning and priming shall be done in the shop unless otherwise directed or permitted. Welds and adjoining surfaces within a few inches thereof shall be cleaned of weld flux, spatter, and other harmful deposits by blasting, power impact tools, power wire brush, or such combination of these and other methods as may be necessary for complete removal of each type of deposit. Wetting of the surfaces during water-washing operations shall be limited to the weld area required to be treated, and such areas shall be dry before painting. Welds and adjacent surfaces cleaned thoroughly by blasting alone will be considered adequately prepared provided that weld spatter not dislodged by the blast stream shall be removed with impact or grinding tools. All surfaces shall be primed as soon as practicable after cleaning but prior to contamination or deterioration of the prepared surfaces. To the greatest degree possible, steel surfaces shall

be cleaned (and primed) prior to lengthy outdoor storage.

3.2 PAINT APPLICATION.

3.2.1 General. The finished coating shall be free from holidays, pinholes, bubbles, runs, drops, ridges, waves, laps, excessive or unsightly brush marks, and variations in color, texture, and gloss. Application of initial or subsequent coatings shall not commence until the Contracting Officer has verified that atmospheric conditions and the surfaces to be coated are satisfactory. Each paint coat shall be applied in a manner that will produce an even, continuous film of uniform thickness. Edges, corners, crevices, seams, joints, welds, rivets, corrosion pits, and other surface irregularities shall receive special attention to ensure that they receive an adequate thickness of paint. Spray equipment shall be equipped with traps and separators and where appropriate, mechanical agitators, pressure gauges, pressure regulators, and screens or filters. Air caps, nozzles, and needles shall be as recommended by the spray equipment manufacturer for the material being applied. Airless-type spray equipment may be used only on broad, flat, or otherwise simply configured surfaces, except that it may be employed for general painting if the spray gun is equipped with dual or adjustable tips of proper types and orifice sizes.

3.2.2 Mixing and Thinning. Paints shall be thoroughly mixed, strained where necessary, and kept at a uniform composition and consistency during application. Paste or dry-powder pigments specified to be added at the time of use shall, with the aid of powered stirrers, be incorporated into the vehicle or base paint in a manner that will produce a smooth, homogeneous mixture free of lumps and dry particles. Where necessary to suit conditions of the surface temperature, weather, and method of application, the paint may be thinned immediately prior to use. Thinning shall generally be limited to the addition of not more than 1 pint per gallon of the proper thinner; this general limitation shall not apply when more specific thinning instructions are provided. Paint that has been stored at low temperature, shall be brought up to at least 70 degrees F before being mixed and thinned, and its temperature in the spray tank or other working container shall not fall below 60 degrees F during the application. Paint that has deteriorated in any manner to a degree that it cannot be restored to essentially its original condition by customary field-mixing methods shall not be used and shall be removed from the project site. Paint and thinner that is more than 1 year old shall be resampled and resubmitted for testing to determine its suitability for application.

3.2.3 Atmospheric and Surface Conditions. Paint shall be applied only to surfaces that are above the dew point temperature and that are completely free of moisture as determined by sight and touch. Paint shall not be applied to surfaces upon which there is detectable frost or ice. Except as otherwise specified, the temperature of the surfaces to be painted and of air in contact therewith shall be not less than 45 degrees F during paint application nor shall paint be applied if the surfaces can be expected to drop to 32 degrees F or lower before the film has dried to a reasonably firm condition. During periods of inclement weather, painting may be continued by enclosing the surfaces and applying artificial heat, provided the minimum temperatures and surface dryness requirements prescribed previously are maintained. Paint shall not be applied to surfaces heated by direct sunlight or other sources to temperatures that will cause detrimental blistering, pinholing, or porosity of the film.

3.2.4 Time Between Surface Preparation and Painting. Surfaces that have been cleaned and/or otherwise prepared for painting shall be primed as

soon as practicable after such preparation has been completed but, in any event, prior to any deterioration of the prepared surface.

3.2.5 Method of Paint Application. Unless otherwise specified, paint shall be applied by brush or spray to ferrous surfaces. Special attention shall be directed toward ensuring adequate coverage of edges, corners, crevices, pits, rivets, bolts, welds, and similar surface irregularities. Other methods of application to metal surfaces shall be subject to the specific approval of the Contracting Officer.

3.2.6 Coverage and Film Thickness. Film thickness or spreading rates shall be as specified hereinafter. Where no spreading rate is specified, the paint shall be applied at a rate normal for the type of material being used. In any event, the combined coats of a specified paint system shall completely hide base surface and the finish coats shall completely hide undercoats of dissimilar color.

3.2.6.1 Measurement on Ferrous Metal. Where dry film thickness requirements are specified for coatings on ferrous surfaces, measurements shall be made with a gage qualified in accordance with Paragraph 09965-1.5.6, Coating Thickness Gage Qualification. They shall be calibrated and used in accordance with ASTM D 1186. They shall be calibrated using plastic shims with metal practically identical in composition and surface preparation to that being coated, and of substantially the same thickness (except that for measurements on metal thicker than 1/4 inch, the instrument may be calibrated on metal with a minimum thickness of 1/4 inch). Frequency of measurements shall be as recommended for field measurements by ASTM D 1186 and reported as the mean for each spot determination. The instruments shall be calibrated or calibration verified prior to, during, and after each use.

3.2.7 Progress of Painting Work. Where field painting on any type of surface has commenced, the complete painting operation, including priming and finishing coats, on that portion of the work shall be completed as soon as practicable, without prolonged delays. Sufficient time shall elapse between successive coats to permit them to dry properly for recoating, and this period shall be modified as necessary to suit adverse weather conditions. Paint shall be considered dry for recoating when it feels firm, does not deform or feel sticky under moderate pressure of the finger, and the application of another coat of paint does not cause film irregularities such as lifting or loss of adhesion of the undercoat. All coats of all painted surfaces shall be unscarred and completely integral at the time of application of succeeding coats. At the time of application of each successive coat, undercoats shall be cleaned of dust, grease, overspray, or foreign matter by means of airblast, solvent cleaning, or other suitable means. Cement and mortar deposits on painted steel surfaces, not satisfactorily removed by ordinary cleaning methods, shall be brush-off blast cleaned per SSPC SP 7/NACE 4 and completely repainted as required. Undercoats of high gloss shall, if necessary for establishment of good adhesion, be scuff sanded, solvent wiped, or otherwise treated prior to application of a succeeding coat. Field coats on metal shall be applied after erection except as otherwise specified and except for surfaces to be painted that will become inaccessible after erection.

3.2.8 Contacting Surfaces. When riveted or ordinary bolted contact is to exist between surfaces of ferrous or other metal parts of substantially similar chemical composition, such surfaces will not be required to be painted, but any resulting crevices shall subsequently be filled or sealed with paint. Contacting metal surfaces formed by high-strength bolts in friction-type connections shall not be painted. Where a nonmetal surface is to be in riveted or bolted contact with a metal surface, the contacting

surfaces of the metal shall be cleaned and given three coats of the specified primer. Unless otherwise specified, corrosion-resisting metal surfaces, including cladding therewith, shall not be painted.

3.2.9 Drying Time Prior to Immersion. Minimum drying periods after final coat prior to immersion shall be : epoxy systems at least 5 days and vinyl-type paint systems at least 3 days. Minimum drying periods shall be increased twofold if the drying temperature is below 65 degrees F and/or if the immersion exposure involves considerable abrasion.

3.2.10 Protection of Painted Surfaces. Where shelter and/or heat are provided for painted surfaces during inclement weather, such protective measures shall be maintained until the paint film has dried and discontinuance of the measures is authorized. Items that have been painted shall not be handled, worked on, or otherwise disturbed until the paint coat is fully dry and hard. All metalwork coated in the shop or field prior to final erection shall be stored out of contact with the ground in a manner and location that will minimize the formation of water-holding pockets; soiling, contamination, and deterioration of the paint film, and damaged areas of paint on such metalwork shall be cleaned and touched up without delay. The first field coat of paint shall be applied within a reasonable period of time after the shop coat and in any event before weathering of the shop coat becomes extensive.

3.2.11 Vinyl Paints.

3.2.11.1 General. Vinyl paints shall be spray applied, except that areas inaccessible to spraying shall be brushed. All of the vinyl paints require thinning for spray application except the zinc-rich vinyl paint (Formula VZ 108d) which will normally require thinning only under certain weather conditions. Thinners for vinyl paints shall be as follows:

APPROXIMATE AMBIENT AIR TEMPERATURE
(DEGREES F)

Below 50	MEK
50 - 70	MIBK
Above 70	MIAC

The amount of thinner shall be varied to provide a wet spray and avoid deposition of particles that are semidry when they strike the surface. Vinyl paints shall not be applied when the temperature of the ambient air receiving surfaces is less than 35 degrees F nor when the receiving surfaces are higher than 125 degrees F. Each spray coat of vinyl paint shall consist of a preliminary extra spray pass on edges, corners, interior angles, pits, seams, crevices, junctions of joining members, rivets, weld lines, and similar surface irregularities followed by an overall double spray coat. A double spray coat of vinyl-type paint shall consist of applying paint to a working area of not less than several hundred square feet in a single, half-lapped pass, followed after drying to at least a near tack-free condition by another spray pass applied at the same coverage rate and where practicable at right angles to the first. Rivets, bolts, and similar surface projections shall receive sprayed paint from every direction to ensure complete coverage of all faces. Pits, cracks, and crevices shall be filled with paint insofar as practicable, but in any event, all pit surfaces shall be thoroughly covered and all cracks and crevices shall be sealed off against the entrance of moisture. Fluid and atomization pressures shall be kept as low as practicable consistent with good spraying results. Unless otherwise specified, not more than 2.0 mils, average dry film thickness, of vinyl paint shall be applied per double spray coat. Except where otherwise indicated, an undercoat of the

vinyl type paint may receive the next coat any time after the undercoat is tack-free and firm to the touch, provided that no speedup or delay in the recoating schedule shall cause film defects such as sags, runs, air bubbles, air craters, or poor intercoat adhesion. Neither the prime coat nor any other coat shall be walked upon or be subjected to any other abrading action until it has hardened sufficiently to resist mechanical damage.

3.2.11.2 Vinyl Zinc-Rich Primer. Primer shall be field mixed combining components A, B, and C. Mixing shall be in accordance with label instructions. After mixing, the paint shall be kept covered at all times to avoid contamination and shall be applied within 8 days after it is mixed. When the ambient and/or steel temperature is below about 80 degrees F, the paint will not normally require thinning; however, the paint shall at all times contain sufficient volatiles (thinners) to permit it to be satisfactorily atomized and to provide a wet spray and to avoid deposition of particles that are semidry when they reach the surface. The paint shall be stirred continuously during application at a rate that will prevent the zinc dust from settling. When spraying is resumed after any interruption of longer than 15 minutes, the entire length of the material hose shall be whipped vigorously until any settled zinc is redispersed. Long periods of permitting the paint to remain stagnant in the hose shall be avoided by emptying the hoses whenever the painting operation is to be suspended for more than 1 hour. The material (paint) hoses shall be kept as short as practicable, preferably not more than 50 feet in length. Equipment used for spraying this zinc primer shall not be used for spraying other vinyl-type paints without first being thoroughly cleaned, since many of the other paints will not tolerate zinc contamination; no type of hot spray shall be used. An average dry film thickness of up to 2.5 mils may be applied in one double-spray coat. Unless specifically authorized, not more than 8 days shall elapse after application of a VZ-108d zinc-rich coat before it receives a succeeding coat.

3.2.11.3 Vinyl Paints. Vinyl Paint Formula V-766e is a ready-mixed paint designed to be spray applied over a wide range of ambient temperatures by field thinning with the proper type and amount of thinner. For spray application, paint shall be thinned as necessary up to approximately 25 percent (1 quart per gallon of base paint) with the appropriate thinner; when ambient and steel temperatures are above normal, up to 40 percent thinning may be necessary for satisfactory application.

3.3 PAINT SYSTEMS APPLICATION. The required paint systems and the surfaces to which they shall be applied are shown in this paragraph, and/or in the drawings. Supplementary information follows.

3.3.1 Fabricated and Assembled Items. Items that have been fabricated and/or assembled into essentially their final form and that are customarily cleaned and painted in accordance with the manufacturer's standard practice will be exempted from equivalent surface preparation and painting requirements described herein, provided that:

a. Surfaces primed (only) in accordance with such standard practices are compatible with specified field-applied finish coats.

b. Surfaces that have been primed and finish painted in accordance with the manufacturer's standard practice are of acceptable color and are capable of being satisfactorily touched up in the field.

c. Items expressly designated herein to be cleaned and painted in a specified manner are not coated in accordance with the manufacturer's standard practice if different from that specified herein.

3.3.2 Surface Preparation. The method of surface preparation and pretreatment shown in the tabulation of paint systems is for identification purposes only. Cleaning and pretreatment of surfaces prior to painting shall be accomplished in accordance with detailed requirements previously described.

3.3.3 System No. A. All paint shall be mixed, thinned and applied in accordance with the respective paint manufacturer's instructions. Each coat of paint shall be uniformly applied, free from holidays, pinholes, bubbles, runs, drips, and excessive or unsightly brush marks. Each coat shall be applied to result in a dry film thickness recommended by the paint manufacturer, but not less than 7 mils per coat. The Contractor shall comply with the manufacturer's instructions for recoat times.

3.3.4 System No. 5-E-Z. Paint shall be spray applied to an average minimum dry film thickness of 7.0 mils for the completed system, and the thickness at any point shall not be less than 5.5 mils. The dry film thickness of the zinc-rich primer shall be approximately 2.5 mils. The specified film thickness shall be attained in any event and any extra coats needed to attain the specified thickness shall be applied at no additional cost to the Owner. Attaining the specified film thickness in fewer than prescribed number of coats or spray passes will be acceptable provided heavier applications do not cause an increase in pinholes, bubbles, blisters, or voids in the dried film and also provided that not more than 2.0 mils (dry film thickness) per double spray coat, nor more than 1.0 mil per single spray pass of nonzinc paint shall be applied at one time.

3.3.5 System No. 16. The first coat shall be brush or spray applied in the field at a maximum spreading rate of 500 square feet per gallon and touched up in the field as necessary to maintain its integrity at all times. The second and third coats shall be applied in the field at a maximum spreading rate of 450 square feet per gallon. The finish color shall be safety yellow.

3.3.5 Protection of Nonpainted Items and Cleanup. Walls, equipment, fixtures and all other items in the vicinity of surfaces being painted shall be maintained free from damage by paint or painting activities. Paint spillage and painting activity damage shall be promptly repaired.

3.4 INSPECTION. The Contractor shall inspect, document, and report all work phases and operations on a daily basis. As a minimum the daily report shall contain the following:

a. Inspections performed, including the area of the structure involved and the results of the inspection.

b. Surface preparation operations performed, including the area of the structure involved, the mode of preparation, the kinds of solvent, abrasive, or power tools employed, and whether contract requirements were met.

c. Thinning operations performed, including thinners used, batch numbers, and thinner/paint volume ratios.

d. Application operations performed, including the area of the structure involved, mode of application employed, ambient temperature, substrate temperature, dew point, relative humidity, type of paint with batch numbers, elapsed time between surface preparation and application, elapsed time for recoat, condition of underlying coat, number of coats applied, and if specified, measured dry film thickness or spreading rate of each new coating.

3.5 PAINTING SCHEDULES.

3.5.1 SYSTEM NO. A. Items or surfaces to be coated: Siphon inlet structure debris gage.

SURFACE PREPARATION	1 st COAT	2 nd COAT
Brush-off blast cleaning	Epoxy Paint	Epoxy Paint

3.5.2 System No. 5-E-Z. Items or surfaces to be coated: Siphon pipe (other than stainless), vent pipe.

SURFACE PREPARATION	1st COAT	2nd COAT	3rd COAT	4th COAT
White Metal Blast Cleaning	Vinyl zinc- rich VZ-108d (double spray coat)	Gray Vinyl V-766e (double spray coat)	White Vinyl V-766e (double spray coat)	Gray Vinyl V-766e (double spray coat)

3.5.3 SYSTEM NO. 16. Items or surfaces to be coated: Guardrail posts and toeboards and exposed portions of guardrail embedded metals.

SURFACE PREPARATION	1 st COAT	2 nd COAT	3 rd COAT
Commercial blast cleaning	SSPC Paint 25 Type II	MPI 9	MPI 9

-END OF SECTION 09965-

15100.1

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SECTION 15100
SLUICE GATES AND HOISTS

PART 1 - GENERAL

1.1 SCOPE. The work provided for herein consists of furnishing all plant, labor, materials, equipment, as well as design, manufacture, testing, delivery, storage and installation of the 42" diameter sluice gates and hoists for the closure structures. The equipment shall be provided complete with all necessary accessories and appurtenances, as shown on the contract drawings and specified herein.

1.2 QUALITY CONTROL.

1.2.1 General. The Contractor shall establish and maintain quality control for all sluice gate operations to assure compliance with the contract requirements and maintain records of quality control for all construction operations including but not limited to the following:

- (1) Use of specified materials and equipment.
- (2) Shop fabrication, assembly and tests.
- (3) Cleaning and painting of the sluice gates and appurtenances.
- (4) Preparation for shipment and storage.
- (5) Site inspection for damage and defects in all material.
- (6) Storage at the work site.
- (7) Cleaning of work areas.
- (8) Installation and tests.
- (9) Operation and maintenance after installation.

1.2.2 Reporting. A copy of these records and tests, as well as the corrective action taken, shall be furnished to the Government daily.

1.3 REFERENCES. The following publications of the issues listed below, but referred to hereafter by basic designation only, form a part of this specification to the extent indicated by the references thereto:

1.3.1 American Society for Testing and Materials (ASTM).

A 36-97

Carbon Structural Steel

A 48-94 (Rev. A)	Gray Iron Castings
A 123-97	Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
A 126-95	Gray Iron Castings for Valves, Flanges, and Pipe Fittings
A 276-98	Stainless and Heat-resisting Steel Bars and Shapes
A 582-95 (Rev. B)	Free-machining Stainless and Heat-Resisting Steel Bars
B 21-96	Naval Brass Rod, Bar, and Shapes
B 98-98	Copper-Silicon Alloy Rod, Bar and Shapes
B 584-98 (Rev. A)	Copper Alloy Sand Castings for General Applications

1.3.2 American Welding Society (AWS).

D 1.1-98	Structural Welding Code - Steel
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1.3.3 Steel Structures Painting Council (SSPC).

SP 10-94	Near White Blast Cleaning
Paint 16-91	Coal Tar Epoxy - Polyamide Black (or Dark Red) Paint

1.4 SUBMITTALS. Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with SECTION 01300 SUBMITTAL PROCEDURES:

1.4.1 Data. Design data for sluice gates, stems, and gate hoists; GA. Submit computations to substantiate the sizing of the gates, stems, and hoists. The following calculations and data shall be included in the submittal:

1.4.1.1 Maximum Opening and Closing Loads. The maximum required stem opening and closing loads (in pounds), based on the operating head specified.

1.4.1.2 Stem Design.

(1) Solid Stem Diameter.

- (2) Threaded Stem root diameter.
- (3) Thread pitch and lead.
- (4) The longest unsupported length of stem.
- (5) Location of stem guides

1.4.1.3 Materials. A list designating materials to be used for each sluice gate component along with the submittal of drawings.

1.4.2 Drawings. GA. Complete shop drawings of the gate slides, frames, guides, gate stems, wedges, stem couplings, gate hoists and appurtenances. Drawings of any items made specifically for this project shall be true shop drawings. Items for which true shop drawings are not required shall be submitted with sufficient descriptive data and/or other information, in addition to the catalog cuts, to demonstrate compliance with the specifications. Structural openings and clearances which are dependent upon the gate design shall be included with the shop drawings.

1.4.3 Manuals. FIO. All manuals and parts lists shall be bound separately; shall be approximately 8-1/2 inches by 11 inches, printed on good quality paper and bound between flexible, durable covers. Drawings incorporated into the manual and/or parts lists may be reduced to page size provided that they are clear and easily legible, or may be folded into the manual to page size. Photographs and/or catalog cuts of components may be included for identification. The operation and maintenance manuals, installation manuals and parts lists shall be submitted at the time of shipment of the sluice gates and gate hoists.

1.4.3.1 Installation Manual. A minimum of 30 days prior to shipment of the sluice gates and gate hoists the Contractor shall submit three (3) copies of the gate manufacturer's standard manual describing procedures to be followed by the field service representative in installing and adjusting the sluice gates, gate hoists and appurtenances. The description shall be such that it may be comprehended by an engineer or mechanic without extensive experience in erecting sluice gates of this type. The description shall be a step-by-step explanation of operations required, and shall include, where applicable, such things as gate component alignment procedures, bolt torque values, wedge block adjustment and similar details.

1.4.3.2 O&M Manuals. Seven (7) copies of all operation and maintenance, lubrication, and repair manuals for all equipment. The Contractor shall furnish manuals containing complete information in connection with the operation, lubrication, adjustment, routine or special maintenance, disassembly, repair and reassembly of the gate hoists and appurtenances furnished under this section. The Contractor shall furnish copies of the manufacturer's spare parts lists or bulletins for the gate hoists and appurtenances furnished. These lists and bulletins shall clearly show all details and parts. All parts shall be adequately described and/or have proper identification marks.

1.4.4 Storage. FIO. The Contractor shall submit, at least 60 days prior to shipment, a detailed description of the proposed storage facilities, as well as a plan for storage maintenance and inspection, as described herein.

PART 2 - PRODUCTS

2.1 EQUIPMENT TO BE INSTALLED. The following equipment, together with all necessary accessories and appurtenances, shall be installed. The following paragraphs may at times describe or refer to only one item, assembly or arrangement, but these requirements shall apply to all such items, assemblies or arrangements furnished under these specifications:

2.1.1 42" Diameter Self-Contained Sluice Gates.

- (1) 2 gate frames and guides
- (2) 2 gate slides
- (3) 2 gate stems with couplings
- (4) 2 gate hoists

2.2 DESIGN. The sluice gates and hoists shall be the product of a manufacturer who has been regularly engaged during the past five years in the production of similar-sized gates and hoists for the design heads specified herein. Liberal safety factors shall be used in the design of the gate and hoist. Working stresses shall not exceed the lower value of either one-third of the yield strength or one fifth of the ultimate tensile strength of the material based on the specified heads. The gate, hoist, accessories and appurtenances shall be designed for installation as shown on the contract drawings.

2.3 WORKMANSHIP. All workmanship, whether in the factory or the field, shall be performed in a skillful manner by qualified mechanics under competent supervision in accordance with the best modern practice for the manufacture of high-grade machinery. All parts shall have accurately machined mounting and bearing surfaces so that they can be assembled without fitting, chipping or re-machining. All parts shall conform to the design dimensions and shall be free of all defects in either workmanship or material that will impair their service.

2.4 MATERIALS. All materials shall be free from defects and imperfections, of recent manufacture, unused, and of the classifications or grades specified herein unless otherwise approved by the Contracting Officer. Material not specifically described shall, as far as practicable, conform to the latest specifications of the American Society for Testing and Materials. All materials, supplies and articles not manufactured by the Contractor shall be the products of recognized reputable manufacturers. Samples of materials shall be submitted for approval when so directed. Equipment, materials and articles installed or used without such approval shall be at the risk of

subsequent rejection.

2.4.1 Iron Castings. Material for iron castings shall meet the applicable requirements of either ASTM A 48 for Class Nos. 30A, 30B, 30C, or ASTM A 126 for Class B.

2.4.2 Bronze. Bronze castings for lift nuts shall meet the applicable requirements of ASTM B 584 for Copper Alloy No. 865. Bronze extrusions for seat facings in the frame and slide shall meet the applicable requirements of ASTM B 21 for Copper Alloy No. 464 or No. 482. Bronze for fasteners, adjusting screws and lock nuts shall meet the applicable requirements of ASTM B 98 for Copper Alloy No. 651 or No. 655.

2.4.3 Stainless Steel. Stainless steel rods for anchor bolts, studs, fasteners, and washers shall meet the applicable requirements of ASTM A 276 for Type 302 or 304, or ASTM A 582 for Type 303.

2.4.4 Structural Steel. Structural steel for sluice gate guides and supports shall meet the applicable requirements of ASTM A 36.

2.5 SLUICE GATES.

2.5.1 Description. The gates to be installed shall be as follows:

<u>No.</u>	<u>Opening</u>	<u>Max</u>	<u>Operating</u>	<u>Kind of</u>	<u>Type of</u>	<u>Type of</u>
<u>Req.</u>	<u>Size-in.</u>	<u>Head-ft.</u>	<u>Head-ft.</u>	<u>Pressure</u>	<u>Frame</u>	<u>Operator</u>
2	42" Dia.	10.0	10.0	Seating and Unseating	Spigot Back	Handwheel

2.5.2 Gate Frame and Guides. The frame shall be of galvanized structural steel and shall be the spigot-back type. The gate frames shall consist of guide angles, stem support angles and a head angle. The angles shall be fabricated from minimum 3/16-inch structural steel. The guide, stem support and head angles shall be of sufficient cross-section to withstand the full loads developed during gate operation. The vertical guide angles and the head angle shall be attached together with a minimum of two bolts on each end. The head angle shall be designed for mounting the gate hoist pedestal specified herein. The frame shall be drilled to bolt directly to the vertical corrugated metal pipe.

2.5.3 Gate Seat. The gate seat shall be a single piece of cast iron, designed for spigot-back type mounting to corrugated metal pipe. The gate seat shall have provisions for mounting spacers and guide angles.

2.5.4 Slide. The slide shall be a dome-shaped, one-piece, cast-iron construction with integrally-cast guides, stem mount and an eye for the cross-bar.

2.5.5 Wedging Devices. The gate shall have an adjustable wedge block on each side of the gate opening, located on the horizontal centerline of the gate. A cast iron bar shall be bolted to the eye cast at the center of the slide. The ends of the bar shall wedge beneath the wedge blocks when the gate is completely closed. The resulting wedging force shall be transferred by the bar to the center of the slide to provide uniform contact of the seating faces.

2.5.6 Seating Faces. Seating faces shall be attached to the gate seat and slide. The seating faces shall be of bronze machined to a minimum 63 micro-inch finish in a flat plane. The seating faces shall be designed such that the maximum clearance between faces shall not exceed 0.004-inch with the slide in the fully closed position.

2.5.7 Operating Stem. The operating stem shall be of stainless steel, ASTM A 276, Type 304, or ASTM A 582, Type 303. Stem threads shall be either machine-cut or rolled ACME type. The number of threads per inch shall be designed to work most effectively with the lift mechanism furnished. The stem shall be fitted with a tapped hole in the top end for handling. The tapped hole shall be of sufficient diameter and depth for the insertion of an eyebolt of proper strength to pick up the entire stem from a horizontal position. The upper end of the stem shall be provided with a bronze adjustable stop nut. The operating stem shall be designed to withstand an 80-pound effort on the rim of the handwheel in either direction. The stem shall have sufficient diameter to accommodate the stresses induced by closing the gate without buckling or permanent distortion.

2.5.8 Stem Couplings. Stem couplings, as required by the design of the gate and frame, shall be of the same material as the operating stem. Couplings shall be threaded and keyed or pinned, then welded to the stem in the field. Couplings shall develop the full strength of the operating stem.

2.5.9 Fasteners. All fasteners shall be of either silicon bronze or stainless steel. Stainless steel bolts and studs shall be provided with bronze nuts. The quantity and size of fasteners shall be as recommended by the gate manufacturer.

2.5.10 Anchors. The anchor bolts shall be stainless steel provided with bronze nuts. The quantity, size, and minimum pullout strength of the anchors shall be as recommended by the manufacturer.

2.5.11 Gate Frame Supports. The Contractor shall furnish gate frame supports for attachment to the riser section, as required by the sluice gate manufacturer for the installation shown on the contract drawings and specified herein. The spacing of the supports shall be as recommended by the sluice gate manufacturer. The supports shall be fabricated from standard structural steel shapes in accordance with ASTM A 36. All structural steel items shall be galvanized in accordance with the applicable provisions of ASTM A 123. The supports shall have slotted bolt holes. Any welding required during fabrication of the gate frame supports shall meet the applicable requirements of AWS D 1.1. All fasteners shall be galvanized steel.

2.6 GATE HOIST. The gate hoist shall be a pedestal mounted handwheel lift designed to operate the sluice gate with 25-pounds of force applied at the rim of the handwheel for a five (5) foot head of water against the gate. The housing shall be cast iron designed for attachment to the head angle. The lift nut shall be a flanged, cast bronze device designed to accommodate thrust while maintaining its position in the lift housing. The lift nut shall be internally threaded to mate with the gate operating stem. The gate hoist shall have a removable cast iron handwheel with a solid rim. The handwheel shall have an arrow, with the word "OPEN" cast in the rim. The hoist shall be provided with a galvanized steel pipe stem cover.

PART 3 - EXECUTION

3.1 PAINTING. The sluice gates shall be cleaned to near white metal in accordance with SSPC SP 10. The sluice gates shall be painted in the manufacturer's plant to a minimum thickness of 16 mils with coal tar epoxy (black) paint in conformance with SSPC Paint 16. Touch-up paint shall be furnished and applied to breaks in the coating after installation. The gate hoists shall be painted with the manufacturer's standard coating for outdoor, year-round service.

3.2 LUBRICATION AND LUBRICANTS. The hoist shall be lubricated prior to any use or operation, either in the shop or in the field. Each bearing shall be lubricated through its associated lubrication fitting, and the gears shall be packed with lubricant at assembly. After shop testing, and prior to shipment, the bearings shall be re-lubricated. Prior to testing in the shop, and to initial operation in the field, the gate seat facings and wedging devices shall be cleaned of all foreign material and lubricated thoroughly with a light grease. Just prior to field assembly, the lift nut and stem threads shall be lubricated. All lubricants shall be as recommended by the gate and hoist manufacturer and shall be submitted by manufacturer's name and number as part of the shop drawings. The Contractor shall furnish an additional 20 pounds of each different hoist lubricant at no additional expense to the Government.

3.3 SHOP ASSEMBLY AND TESTS. After completion of initial machining, all gates shall be completely assembled, in the vertical position, and the wedging devices adjusted to exclude a 0.004-inch thickness gage between the frame and slide seating surfaces. Any additional machining needed to achieve this condition shall be performed, any discrepancies or deficiencies discovered as a result of this procedure shall be corrected, and a retest conducted. The slide shall be completely opened and closed in the guides several times to ensure that it operates freely. The gate shall then be disassembled to the extent necessary for shipment. The Contractor shall notify the Contracting Officer 72 hours in advance so that a representative of the Contracting Officer may witness the assembly, testing and disassembly work, unless this requirement is waived in writing by the Contracting Officer. The hoist shall be operated manually a sufficient length of time to ensure proper assembly and operation. Any malfunctions or discrepancies disclosed as a result of these tests shall be promptly remedied by the Contractor at no

additional expense to the Government, and retests conducted until satisfactory performance is achieved.

3.4 PREPARATION FOR SHIPMENT AND STORAGE AT THE WORKSITE.

3.4.1 Preparation for Shipment. Prior to shipment from the manufacturer's plant, the Contractor shall prepare the gates and hoists for shipment as described herein. All large bulky and/or heavy elements shall be mounted on skids or pallets of ample size and strength to facilitate loading and unloading. All small parts shall be boxed in sturdy wood or heavy corrugated paperboard boxes. A packing list, indicating the contents of each such box and enclosed in a moisture-proof envelope, shall be securely fastened to the outside of the box. The skid and/or pallet mounting and the boxing shall be done in a manner which will prevent damage to the gate and hoist during loading, shipment, unloading, storage, and any associated and/or subsequent handling. Weatherproof covers shall be provided during shipment to protect all items which the Contracting Officer designates as requiring such protection. Any special slings, strongbacks, skidding attachments, or other devices used in loading the equipment at the manufacturers' and/or fabricators' plants shall be furnished for unloading and handling at the destination and shall become the property of the Government unless otherwise directed by the Contracting Officer.

3.4.2 Storage. The Contractor shall store all equipment to be furnished until actual installation. Equipment shall be maintained and protected from damage prior to installation, including appropriate lubrication and housekeeping, as recommended by the manufacturer. Upon delivery at the worksite, bulky parts of the gates, such as the frame and slide, which have been coated with a complete paint system in the manufacturer's plant, may be stored outdoors provided these parts are stored on wood blocking not less than 8 inches above a base of washed gravel or crushed stone not less than 2 inches thick. All other elements of the gates, and the hoists, shall be stored in a weathertight building. A framework covered with a plastic film, or any other such expedient or makeshift arrangement, will not be acceptable. The Contractor shall inspect the storage site at least once per day. The Contractor shall submit at least 60 days prior to shipping a detailed description of the proposed storage facilities, and a plan for storage maintenance and inspection, before any storage actually begins.

3.5 FIELD SERVICE REPRESENTATIVE. The Contractor shall furnish the services of a competent field service representative to supervise and direct the installation and testing of the gates and hoists furnished under this section. The representative shall be present for:

- (1) Complete installation of all gate components.
- (2) Adjustment of all seals and wedges.
- (3) Complete installation and testing of the gates and hoists.

The field service representative shall be a full-time employee of, and

designated as such by, the gate manufacturer, shall have had at least five years of experience with the type of gate and hoist furnished under these specifications and shall be subject to the approval of the Contracting Officer. The services of the representative shall be furnished at no extra cost to the Government. The installation and testing of the gates and hoists under the direction and supervision of the field service representative shall in no way relieve the Contractor of sole responsibility for the gates and hoists meeting all requirements of the specifications and fulfilling all the Contractor's guarantees.

3.6 FIELD INSTALLATION AND TESTS.

3.6.1 Installation. Installation of the gate, hoist and appurtenances shall be in accordance with the manufacturer's installation instructions and under the supervision and direction of the field service representative specified herein. The hoist and all elements of the gate shall be cleaned of all protective coating used thereon during shipment and storage, and all rust, dirt, grit and other foreign matter shall be removed. The gate and hoist shall then be "touch-up" painted as specified herein. The hoist and each element of the gate shall be carefully and accurately aligned so that after it is fastened in place there will be no binding or excessive pressure or wear in any moving part and no distortion of any member. Fasteners shall be tightened uniformly and firmly, but care shall be taken not to overstress either the fastener or the member with which it is associated. Where specific torque values or ranges are cited in the installation instructions, an accurately calibrated torque-wrench, having the proper capacity range, shall be used. Stilson wrenches, cold chisels, or other tools likely to cause injury to the surface of any part, shall not be used in the work of assembly or tightening. All fasteners shall be installed with an anaerobic locking compound similar and approved equal to that of the LOCTITE Corporation. Cleaning prior to application of the locking compound shall follow the manufacturer's recommendations. All shims shall be of either bronze or corrosion-resisting steel. Where grouting is required, either an epoxy grout or a ready-to-use, non-shrinking grouting material, requiring only mixing with water at the worksite, shall be used, and use of any grouting material shall be as recommended by the manufacturer. All blocking and wedges used for support during initial grouting shall be removed prior to final grouting.

3.6.2 Tests. The gate and hoist shall be tested by the Contractor, under the direction of the Field Service Representative in order to determine that they meet the requirements of the specifications. The Contractor shall notify the Contracting Officer at least 5 days prior to commencing the testing. The gates shall be checked in the closed position for leakage. The slide shall then be raised and lowered approximately six inches using the handwheel on the gate hoist. Leakage shall be no greater than 0.1 gallon per minute per foot of perimeter at the specified maximum seating and unseating heads.

3.7 WARRANTY. The Contractor shall furnish the Government, under separate cover, the manufacturer's standard commercial warranty for the gates and hoists.

15200.1

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SECTION 15200

SIPHON PIPE AND APPURTENANCES

PART 1 - GENERAL

1.1 SCOPE. The work provided for herein consists of furnishing all plant, labor, materials, equipment, as well as manufacture, testing, painting, delivery, storage and installation of the siphon pipe, complete with all necessary accessories and appurtenances, including the vent piping, as shown on the contract drawings and specified herein.

1.2 QUALITY CONTROL.

1.2.1 General. The Contractor shall establish and maintain quality control for all pipe and appurtenant operations to assure compliance with contract requirements and maintain records of their quality control for all construction operations, including but not limited to the following:

- (1) All shop fabrication.
- (2) Shop coating and painting.
- (3) Use of specified materials.
- (4) Shop tests.
- (5) Preparation for shipment and storage at the worksite.
- (6) Site inspection for damage and defects in all material.
- (7) Storage at the work site.
- (8) Field coating and painting.
- (9) Installation.
- (10) Field testing.

1.2.2 Reporting. A copy of these records and tests, as well as the records of corrective action taken, shall be furnished the Government daily.

1.3 REFERENCES. The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by references thereto:

1.3.1 American Society for Testing and Materials (ASTM).

- | | |
|----------|---|
| A 53-98 | Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless |
| A 234-97 | Pipe Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service |

1.3.2 American Water Works Association (AWWA).

- | | |
|----------|---|
| C 200-97 | Steel Water Pipe 6 Inches (150 mm) and Larger |
| C 206-97 | Field Welding of Steel Water Pipe |
| C 208-96 | Fabricated Steel Water Pipe Fittings |

1.3.3 National Electrical Manufacturer's Association (NEMA).

- | | |
|--------------|-----------------------|
| NEMA MG 1-98 | Motors and Generators |
|--------------|-----------------------|

1.4 SUBMITTALS. Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with SECTION 01300 SUBMITTAL PROCEDURES:

1.4.1 Shop Drawings. GA. Complete shop drawings of the siphon pipe and appurtenances shall be submitted to the Contracting Officer for approval no later than 90 days after notice of award. Drawings of any items made specifically for this project shall be true shop drawings, but catalog cuts, diagrams, drawings and similar items will be sufficient for all standard manufactured items. However, for those items for which true shop drawings are not required, sufficient descriptive data and/or other information, in addition to the catalog cuts, shall be submitted to demonstrate compliance with the specifications. The shop drawings shall clearly show all information required for connecting, coupling, painting, coating, and installing the siphon pipe and appurtenances, including the materials used. After completion of the installation of the siphon pipe, vent pipe and fill pipe, the Contractor shall submit a complete set of "as-built" drawings and information suitable for microfilming.

1.4.2 O&M Manuals. FIO. Submit five (5) copies of all operation and maintenance manuals for the siphon system valves. The Contractor shall furnish manuals containing complete information in connection with the operation, lubrication, adjustment, routine and/or special maintenance of all the valves furnished under this section. The operation and maintenance manuals shall be submitted at the time of shipment of the valves.

1.5 WORKMANSHIP. All workmanship, whether in the factory or the field, shall be performed in a skillful manner by qualified personnel under competent supervision, in accordance with the best modern practice for the trades involved for the manufacture of high-grade material and equipment. All parts shall conform to the shop drawings, as well as be free of all defects in workmanship or materials.

1.6 PREPARATION FOR SHIPMENT AND STORAGE AT THE WORKSITE. Pipe shall be handled at all times with equipment such as wide slings and wide padded skids designed to prevent damage to coatings. Bare wire rope, chains, hooks, metal bars and narrow skids shall not be permitted to come in contact with the coating. Prior to shipment any portions of the siphon pipe not painted or coated because of future field welding or other installation requirements shall be protected with a coat of rust preventative. This coating shall be removed prior to any field welding or coating.

1.7 STORAGE. Upon delivery at the worksite, and after completion of the field painting, the pipe sections, fittings, special fittings and valves, may be stored outdoors provided they are stored on wood blocking not less than 8 inches above a base of washed gravel or crushed stone not less than 2 inches thick. All pipe ends shall be sealed from intrusion of weather, moisture and debris. Gaskets shall be stored indoors.

PART 2 - PRODUCTS

2.1 MATERIALS.

2.1.1 Pipe.

2.1.1.1 Siphon Pipe. Pipe for the siphon line shall be fabricated and tested in accordance with the applicable requirements of AWWA C200. The pipes shall have a nominal outside diameter of 18 inches and a nominal wall thickness of 0.562 inches.

2.1.1.2 Vent and Fill Pipe. Vent and fill pipe shall be either welded or seamless black steel pipe, in accordance with the applicable requirements of ASTM A 53. The vent piping shall be minimum 3-inch, schedule 40.

2.1.2 Fittings and Special Fittings. Fittings and special fittings for the siphon pipe shall be fabricated from the same material as the pipe, in accordance with the approved shop drawings and the applicable provisions of AWWA C208. Fittings for the vent pipe shall be Schedule 40 seamless steel fittings suitable for welding, in accordance with the applicable requirements of ASTM A 234. All welded connections shall be in accordance with the applicable requirements of AWWA C206.

2.1.3 Wall Thimbles. Standard pipe wall thimbles shall be used at all penetrations of concrete structures. Wall thimbles shall be of steel construction with flanges compatible with the valves and fittings to which they connect. Custom wall thimbles shall be approved by the Contracting Officer prior to incorporation into any work.

2.1.4 Pipe Couplings. Pipe couplings shall be similar and equal to Straub Metal-Grip type coupling, as manufactured by Tadco Manufacturing, Inc., Mississauga, Ontario, L4W 1B9. Coupling shall have no more than two bolts required to develop full strength and sealing of coupling. As the bolts are tightened to the factory specified torque, specially shaped teeth in an anchor ring shall bite into the surface of the pipe to create an axial restraint connection. The coupling gasket shall have a progressive sealing effect by means of a pressure equalization channel. The coupling shall compensate for axial movement and angular deflection.

2.1.5 Siphon Pipe Gate Valves. The siphon pipe gate valves shall be a standard double disc valve with bronze seat faces, bronze non-rising stem handwheel operator and flanged mounting. The Contractor shall provide shaft extensions and couplings as required to place the hand wheels at the elevations shown on the contract drawings. The valves shall be similar and equal to the Waterman HD-30 double disc line gate valve, as manufactured by Waterman Industries, Inc., Exeter, California 93221.

2.1.6 Filler and Vent Pipe Three-way Valves. Three-way control valves shall be installed on the filler and vent pipes as shown on the contract drawings. The valves shall be the tapered plug design with a cast iron body, ANSI Class 150 flanges, Chloroprene-faced plug, stainless steel bearings and lever actuator, similar and equal to a DeZurik model PTW3,F1,CI,7,S-1-CR*LV with ACC*LVT101 lever.

2.1.7 Filler Pipe Pressure Relief Valve. A pressure relief valve shall be mounted between the siphon filler pump discharge hose and the filler pipe three-way valve. The relief valve shall have sufficient capacity to bypass the full maximum pump output with a pressure adjustment range commensurate with the pump operating total dynamic head (tdh) range. The relief valve shall be mounted such that it discharges the bypass flow onto the rip-rap away from the piping, fittings and valve controls.

2.1.8 Air Release Valve. A cast iron air release valve shall be mounted on the vent piping as shown on the contract drawings. The body shall be cast iron; the internal parts shall be stainless steel or Buna-N. The valve shall release at least 18 cubic feet per minute at nominal siphon system pressure. Air release valves shall be joined to the vent piping with standard reducing fittings and nipples.

2.1.9 Kamlok Couplings. Coupling fittings for connection of pump discharge hose shall be similar and equal to "Kamlok" coupling fittings, as manufactured by the Dover Corporation/OPW Division, Cincinnati, Ohio 45240. The couplings shall have a bronze, Monel or stainless steel body, as required to mate with the pump discharge hose coupling half.

2.1.10 Discharge Hose. Discharge hose, sized for the pump outlet, filler and vent pipe fittings and suitable for resting on the lakeside rip-rap without damage, shall be provided for the siphon filler pump connection and the air release by-pass connection. Hose length shall be continuous from connection points as described herein or shown on the contract drawings. Hose shall be factory assembled with the proper Kamlok coupling fittings, and tested to be leak-free. Siphon filler pump discharge hose shall be a smooth black rubber tube, with multiple layers of high-tensile textile reinforcement, and a tough abrasion/weather resistant cover. Vent pipe discharge hose shall be a PVC tube and cover with high-tensile textile reinforcement, molded into a single homogenous unit.

2.2 SIPHON FILLER PUMP.

2.2.1 General. The siphon filler pump shall be a portable, submersible dewatering pump of the vertical, axial type for use with raw water, complete with submersible electric motor, power cable, control cable, controls, lifting chain/cable and discharge hose fitting. Voltage, amperage, phase and other electrical requirements shall be coordinated with the portable generator supplied in Section 15200-2.3, below. The pump shall meet all requirements for net positive suction head required (NPSHR) for the conditions shown on the contract drawings. The pump shall be capable of operating in the dry (for maintenance or operating tests) for short periods.

2.2.2 Design and Manufacture. The pump discharge capacity shall be not less than 70 gallons per minute (gpm) against an approximate total dynamic head (tdh) of 30 feet of water. The Contractor shall calculate the actual approximate tdh to include all losses (static and dynamic) in the discharge hose, fittings, valves and piping to be approved by the Contracting Officer. Variations in design tdh resulting in less than 70 gpm output from the pump shall be subject to approval by the Contracting Officer.

2.2.3 Submersible Electric Motor. The electric motor shall be a submersible design conforming to the requirements of NEMA MG 1. The motor shall be of sufficient capacity to avoid overload at any design operating condition. Power and instrumentation cables shall be specifically designed for use with submersible pumps in accordance with the applicable requirements of NEMA WC 7. Power cable shall be a minimum of fifty (50) feet long with integral control enclosure and proper plug for the portable generator permanently attached. Power and instrumentation cables shall enter the motor through a sealing system that prevents water entry into the motor unit and provides strain relief. Pump/motor controls shall be furnished in a NEMA 4X enclosure, which provide short circuit and overload protection.

2.3 PORTABLE GENERATOR.

2.3.1 General. The portable generator shall be a gasoline engine-

powered device designed to withstand severe weather conditions, dust, dirt, sand and general construction site conditions, while producing stable power for operation of the submersible siphon filler pump.

2.3.2 Engine Features. The engine shall be a four-cycle, Over Head Valve (OHV) unit with a low oil level shutdown switch, muffler with spark arrestor, air filter, vibration isolators and a fuel tank. The minimum running time on a single tank of fuel shall be greater than eight (8) hours.

2.3.3 Generator Features. The portable generator shall provide sufficient wattage, voltage, amperage and phase to operate the submersible siphon filler pump electric motor, provided above, at all operating conditions on the pump curve supplied by the pump manufacturer. The generator shall be a brushless type with a condenser type regulator, rain-protected alternator, Ground Fault Circuit Interrupter (GFCI) duplex receptacle, circuit breaker and copper windings.

2.4 PAINTING.

2.4.1 General. The work covered in this paragraph consists of cleaning and painting the siphon pipe, the siphon filler pump, the portable generator, the accessories and appurtenances, in the manufacturers' plants; and the additional or touch-up painting of the siphon pipe and appurtenances required at the worksite.

2.4.2 Surfaces Not to be Painted. Paint shall not be applied to aluminum, rubber, corrosion-resisting steel, non-ferrous finished or machined surfaces, galvanized parts, nor to metal surfaces to be embedded in concrete.

2.4.3 Siphon Pipe. The siphon pipe shall be coated inside and out in the manufacturer's plant and in accordance with the applicable provisions of SECTION 09965 - PAINTING. All coatings shall be touched up in the field as necessary.

2.4.4 Siphon System Valves. The siphon system valves shall be cleaned and painted according to the manufacturer's standard paint system for high humidity environment. Touch-up painting shall be in accordance with the manufacturer's recommendations.

2.4.5 Vent Pipe. All vent pipe, including fittings, shall be painted as specified in SECTION 09965 - PAINTING.

2.4.6 Standard Manufactured Items. Standard manufactured items, such as the siphon filler pump and portable generator, shall be painted with the manufacturer's standard paint system for submersible or outdoor weather-resistant service as applicable for the service intended.

2.5 NAMEPLATES. The pumping unit and portable generator shall be identified by a separate nameplate permanently attached in a conspicuous, accessible location. The plate shall bear the manufacturer's name, model designation, serial number, and other pertinent information such as horsepower, speed, capacity, type, voltage, wattage, amperage, phase and direction of rotation. The plate shall be made of corrosion-resistant metal with raised or depressed lettering and a contrasting background.

2.6 INSTRUCTION PLATES. The pumping unit and portable generator shall be equipped with instruction plates, including any warnings and cautions, describing any special or important procedures to be followed in starting, operating and servicing the equipment. The instruction plates shall be made of corrosion-resistant metal with raised or depressed lettering and a contrasting background located in a conspicuous, accessible location.

PART 3 - EXECUTION

3.1 FABRICATION AND INSTALLATION. The siphon pipe and vent pipe shall be field assembled with flexible couplings, flange joints, welded joints and welded fittings, as shown on the contract drawings or approved by the Contracting Officer. Field welding shall be permitted only to the extent that such welding is clearly shown on the approved shop drawings. All field welding shall be performed accordance with the applicable requirements of AWWA C206.

3.2 TESTING.

3.2.1 General. The complete installed piping system shall be pressure tested for air leaks to insure that a siphon, which prevents the leakage of air into the system, can be achieved. All joints, at couplings, flanges, threads, welded joints, fittings, and valves, shall be completely soap bubble tested to verify pipeline integrity.

3.2.2 Initial Operational Testing. The initial operational test shall be performed in the following basic sequence:

- (1) Close the lakeside siphon discharge pipe gate valve.
- (2) Open the landside siphon discharge pipe gate valve.
- (3) Connect the submersible siphon filler pump to the discharge hose with the Kamlok coupling.
- (4) Connect the discharge hose to the siphon filler pipe with the Kamlok coupling.
- (5) Open the filler pipe three-way valve to permit pumping into the main siphon discharge pipe.
- (6) Open the vent pipe three-way valve to permit air from the main siphon discharge pipe to enter the air release valve.
- (7) Lower the submersible siphon filler pump into the lake from the access bridge using a steel cable for later retrieval.
- (8) Fill the portable generator fuel tank with proper fuel.
- (9) Start the portable generator and run to steady state condition in accordance with the manufacturer's recommendations.
- (10) Connect the submersible siphon filler pump control system to the portable generator power source in accordance with the manufacturer's recommendations.
- (11) Start the submersible siphon filler pump and begin filling the siphon discharge pipe until the discharge chamber is completely full to the top of the concrete weir.
- (12) Close the landside siphon discharge pipe gate valve located next to the discharge chamber.
- (13) Fill the siphon discharge pipe system until the air release valve expels all air from the vent pipe at the high point of the system in accordance with the manufacturer's recommendations.

(14) Close the vent pipe three-way valve to prevent air or water from the main siphon discharge pipe from exiting to the air release valve or backup system bypass hose.

(15) Immediately operate the filler pipe three-way valve to shunt the siphon filler pump discharge over the rip-rap back to the lake prior to pump shutdown.

(16) Shut off the submersible siphon filler pump.

(17) Open the lakeside siphon discharge pipe gate valve.

(18) Open the landside siphon discharge pipe gate valve.

(19) Check that flow over the concrete weir is established.

(20) After 30 minutes of flow over the weir, open the vent pipe to atmosphere to "break" the siphon and repeat the test.

3.2.3 Backup System Operational Testing. The backup system operational test shall be performed in the following basic sequence:

(1) Close the lakeside siphon discharge pipe gate valve.

(2) Open the landside siphon discharge pipe gate valve.

(3) Connect the submersible siphon filler pump to the discharge hose with the Kamlok coupling.

(4) Connect the discharge hose to the siphon filler pipe with the Kamlok coupling.

(5) Connect the vent discharge hose to the siphon vent pipe with the Kamlok coupling.

(6) Extend vent discharge hose to downstream of the concrete weir into the discharge channel.

(7) Open the filler pipe three-way valve to permit pumping into main siphon discharge pipe.

(8) Lower the submersible siphon filler pump into the lake from the access bridge using a steel cable for later retrieval.

(9) Fill the portable generator fuel tank with proper fuel.

(10) Start the portable generator and run to steady state condition in accordance with the manufacturer's recommendations.

(11) Connect the submersible siphon filler pump control system to portable generator power source in accordance with the manufacturer's recommendations.

(12) Start the submersible siphon filler pump and begin filling the siphon discharge pipe until the discharge chamber is completely full to the top of the concrete weir.

(13) Close the landside siphon discharge pipe gate valve located next to the discharge chamber.

(14) Fill the siphon discharge pipe system until the vent discharge hose expels all air from the vent pipe at the high point by flowing continuously full at the discharge chamber end of the hose.

(15) Close vent pipe three-way valve to seal the vent from siphon discharge pipe. (*No flow path to air release valve or vent discharge hose*)

(16) Immediately operate filler pipe three-way valve to shunt the siphon filler pump discharge over the rip-rap back to the lake prior to pump shutdown.

(17) Shut off the submersible siphon filler pump.

(18) Open the lakeside siphon discharge pipe gate valve.

(19) Open the landside siphon discharge pipe gate valve.

(20) Check that flow over the concrete weir is established.

(21) After 30 minutes of flow over the weir, open the vent to atmosphere to "break" the siphon and repeat the test.

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SECTION 16400 - ELECTRICAL WORK AND EQUIPMENT

PART 1 GENERAL

1.1 SCOPE. The work covered by this section consists of furnishing all plant, labor, materials, supplies, and performing all operations necessary to splice in a new section of lighting feeder between the two light standards impacted by the placement of the siphon piping. The Contractor shall locate the existing lighting feeder, cut and abandon as required a section of that cable of sufficient length to facilitate siphon-piping installation. A new section of cable of identical size to that abandoned shall be installed between the two cut ends of the existing cable. Waterproof splices suitable for underground installation shall connect the new cable to the existing feeder cable. The work shall be as specified herein and shown on the drawings. The installation shall conform to the applicable rules of the NFPA code No. 70.

1.2 APPLICABLE PUBLICATIONS. The following publications of the Issues listed below but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by the references thereto:

1.2.1 National Electrical Manufacturer's Association (NEMA).

WC 70/ICEA S-95-658-1999, Nonshielded 0-2kV Cables

1.2.2 National Fire Protection Association (NFPA).

NFPA 70-2002 National Electrical Code

1.2.3 Underwriters' Laboratories, Inc. (UL).

UL 83-98 Thermoplastic-Insulated Wires and Cables

UL 510-94 Insulating Tape

UL 486A-97 Wire Connectors and Soldering Lugs for
use with Copper Conductors

1.3 SUBMITTALS. Shop drawings detailing the cable and splices proposed shall be submitted to the Contracting Officer, for approval, in accordance with the applicable Contract Clauses entitled "Specifications and Drawings for Construction", and Section 01300, before starting installation.

1.4 WARRANTIES. Commercial warranties for equipment furnished under this section shall be furnished as specified in SPECIAL CLAUSE 00800-28.

PART 2 PRODUCTS

2.1 CABLE. Cable shall be of the same size and possess the same salient features as the existing lighting feeder cable.

2.2 WATERPROOF SPLICES. Low-voltage cable splices and terminations shall be rated at not less than 600 Volts. Splices shall be made with noninsulated, solderless, pressure type connectors, conforming to the applicable requirements of UL 486A and UL 486B. Splices shall then be covered with an insulation and jacket material equivalent to the conductor insulation and jacket. Splices shall be of the sealed type conforming to ANSI C119.1 or shall be waterproofed by a sealant-filled, thick wall, heat shrinkable, thermosetting tubing or by pouring a thermosetting resin into a mold that surrounds the joined conductors.

PART 3 - EXECUTION

3.1 WIRING METHODS.

3.1.1 Installation of Direct Burial Cable. Direct burial cable shall be installed in the approximate location as shown on the drawings. Splicing shall be permitted as specified above. Direct burial cable shall be installed a minimum of 24 inches below grade and, in the vicinity of the siphon piping, 24 inches below the invert of the siphon piping. The cable bend radius shall be not more than that recommended by the manufacturer. In no case shall the cable be left in longitudinal tension. Open excavation in the area of the splices shall be backfilled and compacted as specified in SECTION 02221.

3.2 TESTS. Tests shall be performed to indicate the lights function properly. The Contractor shall correct, to the satisfaction of the Contracting Officer, and without expense to the Government, any defects found during the tests. The tests shall be performed in the presence of the Contracting Officer or an authorized representative. The Contractor shall furnish all instruments and personnel required for the tests. Immediately after the completion of any official tests, the Contracting Officer shall receive a copy of the tests results.

END OF SECTION 16400